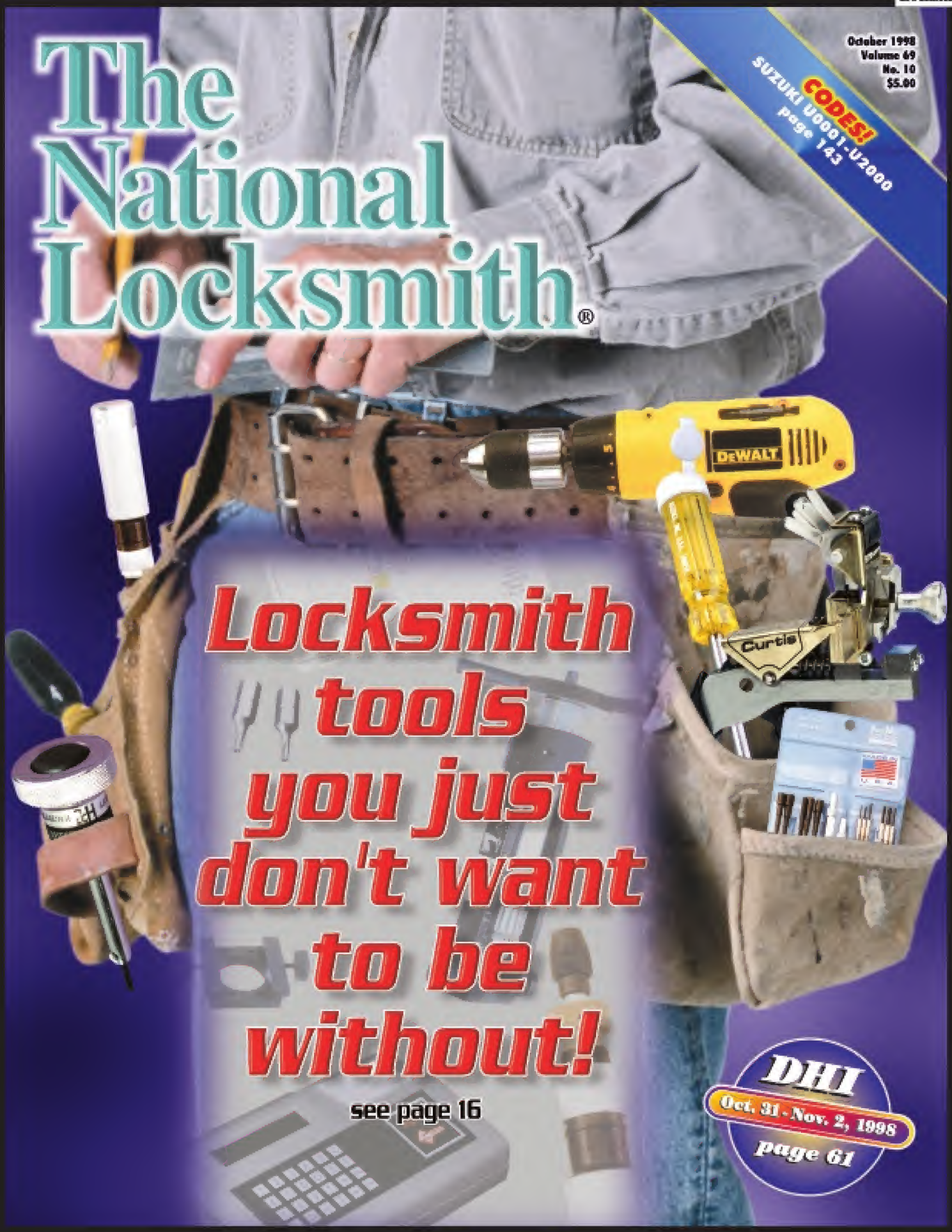
The National Locksmith

The National Locksmith®

October 1998
Volume 69
No. 10
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page 143



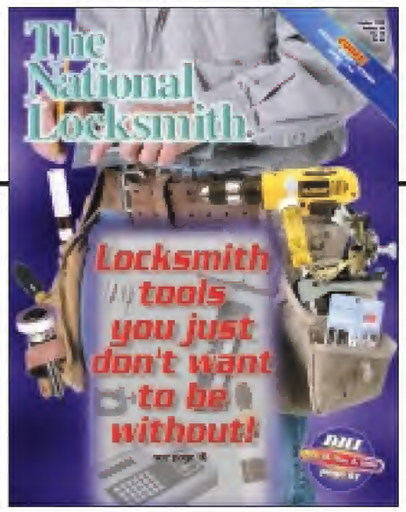
Locksmith tools you just don't want to be without!

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On The Cover...



A-1 Security, BWD, HPC, Ilco, Keedex, Lockmasters, MBA and Singertech, are just a few of the manufacturers offering new products for your toolbox.

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COMMENTARY

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INSTA CODE Books!

Many of you are using computers to look up codes, and we've been talking to thousands of you about our INSTA CODE program. The program has quickly gained a great following due to its ease of use, excellent features, and the terrific customer service we offer.

Now we're introducing a line of books called INSTA CODE Books for those of you who prefer paper book over software. The first in this series of code books to be introduced are those for foreign vehicles. Each vehicle is sold as a separate volume, so you can just purchase what you need.

The volumes include: Motorcycles, Datsun, Honda, Infiniti, Mazda, Mitsubishi, Nissan, Subaru, Suzuki, Toyota, BMW, VW, and Volvo.One really nice feature of the INSTA CODE Books is that each volume includes all the 1200CM ™ code cards you need for all the series.

So if you'd like to supplement your code books with vehicles, or if you're just getting started with codes, take a look at page 159 for more information on our new INSTA CODE Books!

And of course, if you're interested in the software program instead of the books, you can get the full blown INSTA CODE program in your hands right now for only $59.95. Just ask for our Easy Pay Plan kit and learn how you can make only 12 payments to pay for the software. But remember, we send you everything as soon as we receive your very first payment.

Often I hear talk about the locksmith becoming a dinosaur. You'd be surprised at who some of the people are who express the opinion that today's locksmith is a dying breed, soon to become the next extinct species. I've heard some individuals express this opinion who make their whole livelihood serving the locksmith trade itself.

Recently, I went on vacation in the wilds of Wyoming. When we got settled in at the ranch I noticed that we had been given no keys to our doors. Now, this ranch was located 18 miles from the nearest town. That town has a population of only 895. I probably have more people living on a six block stretch of my street in Chicago than live in that entire Wyoming county.

We didn't need keys out there because there was nobody to steal anything. Eighteen miles out of DuBois, WY, security consists of a dog to let you know if a bear is outside the door.

In the rest of our nation, though, there is still a need for locks and keys and security. Though that might be sad, it's a good thing for the locksmith. Don't listen to the pessimists. We'll be around for a long time.



Marc Goldberg

Join our free E-mail list!
Receive locksmith info by E-Mail.
Write us at: NATLLOCK@aol.com

Marc Goldberg
Publisher

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Mango's Message

Everyone's Doing It!

If there is one locksmithing skill that has helped me more than any other, it's knowing how to pick locks. Not because it was the most challenging and rewarding skill to know, and not because it made me more money than I can count. Learning to pick locks helped me the most because I am constantly locking *myself* out of something. If it wasn't for a trusty pick and turning tool, I'd have to keep a locksmith on a retainer just to get me out of jams.

I can't begin to tell you how many times I have locked myself out of my home, my car, my wife's car, my luggage, you name it. Anything in my life that has a lock on it has had the keys lost or misplaced by me at one time or another. I'm terrible.

Actually, I'm really not as absent minded as I make myself out to be. I'm careless with keys because I know that as long as there is a pick set near by, everything will be O.K.

As one who loves to pick locks, I also love lock picks of all types, styles, shapes and sizes. I have picks for pin tumbler locks, wafer locks, tubular locks, safe deposit locks, safe locks, high security locks, you name it, I've got it. I don't only have every pick and pick prototype known to man, I have them everywhere. I have picks in my house, my garage, my basement, my car, my wife's car, my motorcycle, my office, my wallet, buried in my front yard and my back yard. Anywhere I frequent regularly, I have a pick set hidden somewhere.

There is, however, one advantage to my careless behavior with keys; it has allowed me to hone my lock picking skills. I fear no lock. I'm not bragging though, because my confidence was achieved more out of necessity than desire.

I must say that having the ability to pick a lock has helped not only myself, but others as well. Not long ago a friend of mine called and needed into his garage because he lost his keys. Another time a friend was interested in purchasing a house that was being auctioned on a Monday morning and wanted to view it. It was the prior Saturday morning and he could not make contact the Realtor to gain access to the property. In a state of desperation he called me to see if I would pick the locks. I did. I know we broke every law in the book, but there was no harm done and no one was hurt. I have even opened cars for office employees that have been locked out.

Yes, knowing how to pick a lock is a skill that has been very handy.

As you can imagine, when I see a new pick it is sure to capture my attention. Such was the case when I saw the following pick advertised in a magazine called Lifestyle Fascination. It's a mail order company.

The pick is called the Kwick' Pick and sells for $29.95. It is actually a very attractive device. The pick blade itself is retractable into a red anodized aluminum alloy housing. There is a knurled knob on the side used to extend and retract the pick blade as well as lock it into place. The tension wrench (or turning tool, whichever you prefer) is neatly nestled into the side of the housing and is locked into place with a knurled end cap. When in place the tension wrench also doubles as a shirt pocket clip.



The design and workmanship of the Kwick Pick is very impressive. The only thing it's lacking is interchangeable pick blades. It comes with a standard rake pick.

Continued on page 8.



Greg Mango

Greg Mango
Editor

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Mango's Message

Continued from page 6

Besides being advertised in a mail order magazine, what was really interesting to me was the verbiage used for the ad. It read:

Kwick Pick is "key" insurance for those times when you just can't reach or wait for a locksmith!

Invented by a professional locksmith, this cleverly designed 3-in-1 tool can help you do it yourself! Simply insert the extended pick into the keyhole. Then juggle gently, in an in-and-out, up-and-down motion (illustrated and described in the accompanying instructions) as you turn the tension wrench as it were a key. With a bit of practice, you can manipulate the pins and open the lock!



Kwick Pick works on a wide range of locks, car doors, home, office, file cabinets and desk drawers, padlocks, etc. And it will pay for itself the first time you use it and you DON'T have to pay a locksmith! Lightweight and compact, Kwick Pick stores easily in your glove compartment, desk or purse. Why wait around for help when you may not have to? Get Kwick Pick today!

Interesting, isn't it? What I found the most perplexing is the fact that the ad states that the Kwick Pick was invented by a professional locksmith, so that you the general public won't have to pay for one or wait for one.

Apparently the Lifestyle Fascination company received a few complaints about this product being in its catalog because in very fine print was the following:

Due to overwhelming demand and customer response we have changed our minds and chosen to continue offering the Kwick' Pick "key" in our catalogs. We appreciate all of those who have expressed concern about our offering it, yet we believe that Kwick Pick has a genuinely legitimate purpose for those emergency situations when you are locked out of your car or home. We appreciate all of the Lifestyle Fascination readers who cared enough to share their opinion with us.

I'd venture to say that it was probably a locksmith who sent a complaint to this company about selling the Kwick Pick to the general public. Not to mention the fact that it is against the law.

Judging how the appreciative disclaimer by the Lifestyle Fascination company was written, it would appear that the company dismissed any notion of discontinuing the advertisement for this product because it is selling. I know I bought one!

There is, however, no real reason to be alarmed over such a product as the Kwick Pick. In the hands of an unskilled layman, this tool will be of little use and eventually end up in that scrap pile of unused junk that everyone has. Sure, someone may get lucky and with a little determination actually pick a worn out pin tumbler lock or wafer lock. Big deal. It's not going to put any locksmiths out of business. Without any real knowledge of locks and the proper use of such a tool, the best one can hope for is luck. No reason to be concerned. I will, however, leave you with a true story for which there is reason to be concerned.

A good locksmith friend of mine by the name of Rudy Sifuentes, owner of Crosstown Locksmith Service in Melrose Park, IL. recently encountered a situation that is the first I have heard of. He was called to rekey a house for an elderly lady who had her purse stolen earlier that day. Along with her purse went her bill fold, house keys, car keys, credit cards, personal identification and more. When he arrived at the house the woman was already inside. When asked how she got in, she told him the police let her in!

After being robbed, this woman called the police to file a complaint. After the officer arrived and filled out a report, he drove the woman to her home and then picked the locks to let her in. He then told her to call a locksmith to rekey the locks. At least he did that much. And you thought it was a problem when the police opened cars!

O.K., here's the $25,000 question. Who is more likely to infringe on your lifestyle, Joe handyman with a Kwick Pick, or Officer Friendly with a Kwick Pick?



Well, if you can't beat them, join them, and get a Kwick Pick of your very own. However, don't do like I did and order one through a mail order magazine. Why wait a couple of weeks to receive a Kwick Pick in the mail when you can get instant gratification by going down to your friendly True Value hardware store and purchase one. Oh, did I forget to mention that a True Value hardware store in Dallas, Texas is selling the Kwick Pick on a display board right at the counter? Happy shopping. TNL

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Letters

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length.

Helping Others Helped Me

Thanks so much for the GM Wheel Puller; The Guide to Tips and Cars and the 25 locksmith bucks.

I hope my Technitip helps others. When I started years ago, a locksmith in a neighboring town helped me considerably. I have always tried to help other locksmiths and will continue to do so.

I enjoy your magazine considerably and through the years have seen it get better and better. Keep up the good work. *Cy Rollins*
Delaware

Corbin Block-Out Just May Lock-Out

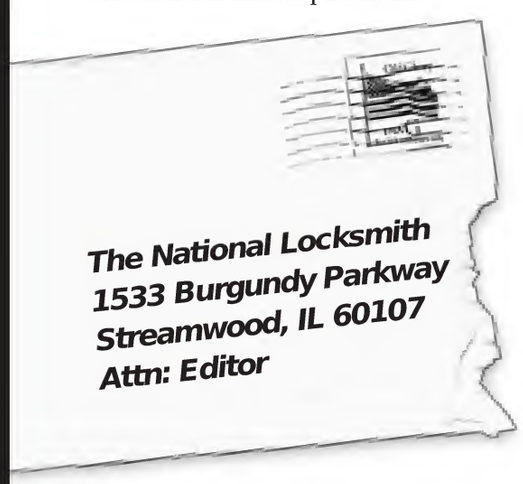
The article in the July magazine by John Baker, on the "Corbin Block-Out Cylinder" got my attention. I am the author of the Corbin Russwin Cylinder Manual, from which John has copied all of his art and some of his text. I was impressed with the very clever application he suggests for this cylinder. However, your readers should know that the use of conventional master pins in this cylinder has proven to be unreliable and can actually cause a lockout.

While working for Corbin Russwin, I discovered drawings of a conventional (non-high security) version of this cylinder. I wanted to put it into the product line, but I learned that it was prone to "rekeying itself." When the cylinder is operated quickly, or when it becomes worn, the master pins can hang in the shell as the plug begins to rotate. In a normal cylinder with only one set of top pins the same thing can happen, but it won't cause a problem. In this cylinder, however, you have a second set of top pins and springs just waiting to lock into the plug which just rotated without one of its master pins.

The special pins in the high security cylinder interlock so this problem should not occur. Furthermore, if a thin conventional master pin should tilt, it can jam more easily in the grooves cut around the plug at each of the high security pin chambers of this cylinder.

Please pass this information along to John and my fellow readers who would have no other way to know what happened behind the scenes with this cylinder. Follow the manufacturer's advice. The factory learned the hard way. Don't do it.

On the less serious side, the first thing that struck me about this article was the anachronism of the Corbin logo. That logo bit the dust back in 1965. It was never used with the high security blockout cylinder covered in this article. Also, since May 1993 the company name is Corbin Russwin, not Corbin.





None of that is any big deal, but it bugs guys like me who love the history of our profession.

A.J. Hoffman, CML
E-mail

A Tax and Nothing But

The Illinois law is no doubt an example of "Be careful, you might get what you wish for!"

A license is a tax, no more, no less. If you are in a state that requires licensing, locksmithing without a license doesn't quite rate up there with knocking off a liquor store. That is why no one is going to spend much effort prosecuting those desperadoes!

Also, do you think a state or county entity is really going to be taken to task for opening cars? Yeah, right!

I hope Tom Bates continues to take it to them, but he better make sure his tax returns are up to date.

Ronal G. Ryder
Nevada

S&G 8400 Info

I have just read the article by Dale Libby, relating his experience

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Continued from page 10

opening a Diebold money chest with a Sargent & Greenleaf 8400 series lock. I would like to make some comments and also add some information for those who are not familiar with the 8400 series.

Dale Libby is to be commended on the many excellent, informative and educational articles he has written.

Most 8400 spindles are screwed into the dial and are held at the proper position by a type of spline key. Few 8400 dials that can be pulled, most cannot. There are other methods of opening the cam, besides the use of the butterfly. More about this later.

When Harry Miller first designed this lock, it was not called an 8400, it was designated T-6735 MP RH and was manufactured in December 1956. Over the years, changes were made and the 8400 series evolved. It was patented Feb. 23, 1965. The main changes were in the inner spindle and cam.

The raised portion of the back cover is to accommodate the cam. The small hole in this raised portion is for the end of the inner spindle. This style inner spindle was made up of two pieces. The newer inner spindle is one piece and there is no longer a need for the small hole in the back cover.

The talon on the end of the inner spindle fits into a triangular shaped opening in the outer slide of the cam. The other end, is in the hole in the "Arrow Knob," in the center of the dial. When the combination has been dialed and the dial rotated right to "0", the Arrow Knob is rotated 1/4 turn to the right. This rotates the inner spindle and opens the cam. The dial can now be rotated to the right and the bolt is drawn.

When the cam is closed, it is completely round and you can't find contact points. When the cam is opened with the wheel gates not being aligned with the fence, the lever will not make contact with the cam. This is the reason it was called, "Manipulation Proof."

When a safe company orders 8400 series locks, they order the hand of lock needed for their product. If the dial is splined RH and the lock is mounted LH, the Arrow Knob will not turn when "0" on the dial is aligned with the opening index. It would open if turned to 50.

In my opinion, if you are going to stock an 8400 series lock, you should order a Centi-Spline dial. The spindle can be removed from the dial and positioned for the hand of lock desired.

Note that the numbers on the inside of the dial are numbered CCW. The number for proper splining are: RH 39, LH 89, VU 64, and VD 14. This is the method to be used to spline the spindle, for the hand of lock the drive cam has only one keyway. With this type of dial, the manufacturer could mount the lock at an angle.

The article mentions removing the outer portion of the dial with a hole saw. When doing so be sure to secure the dial so it can't rotate, and remove the pilot drill bit. My choice when opening this lock is to drill for the fence, it is not necessary to drill the fence off because you might not get a clean cut and the lever would not move into the cam gate.

If for some reason the Arrow Knob will not open the cam it may be that the inner spindle is broken, the dial is missing or some other reason. If you can rotate the spindle and align the wheel gates with the fence, you can open the lock. After the gates are aligned, reach in with a small diameter screwdriver or some other instrument, and depress the lever. There will be spring resistance, but you can force the lever far enough into the cam to draw the bolt.

I hope this information will benefit some who are not familiar with the 8400 series S&G. After working with it for a while, you will discover it is a very well made, dependable lock. *Kenneth P. Lee*
Oklahoma

It Happened Again!

I went 20 miles to open a car for a customer only to find that the woman's son or brother called a tow truck driver to open it as well. I even told the woman on the phone that she must pay the charges I quote her even if another person opens the car. She got someone else to do the job and did not even have the courtesy or consideration to be there to meet me.

I have started to ask for a credit card number to charge against the customer when this situation arises, but I have received only lukewarm responses from customers. They do not like it. I do not know how to overcome this problem. If anybody out there knows how to handle these situations please write. I would like to know how to proceed. Thanks.

Bob Galick,
Pennsylvania

Water Logged

I thought I would share an interesting story that may be of some value to those locksmiths that go out on safe opening calls.

I was asked to open a floor safe at a home in LaGuna Hills, California. The new home owners had visions of jewelry and other valuables ust waiting for them inside the safe. The previous owners did not have the combination for it. After getting the safe serial number, I called AMSEC, and obtained the factory set combination.

I drove over to inspect the safe and found it secured in concrete floor of the garage and under where the car would be parked.

I checked the three wheels to see if they were being picked up properly. They were. I dialed the given combination. Nothing happened. I tried the usual dialing above and below the combination. Still nothing. I decided to drill and after a short time, I felt the drill bit pass through the hardplate and into the lock casing.

I used a straw and blew away the metal cuttings. As the straw went into the drilled hole, out shot water, just like the Old Faithful. The safe was full of water and had been for quite some time.

I proceeded to suck out approximately 1-1/2 quarts of yellow brown water until I could view all 3 wheels. I lined up the gates. Nothing inside but water and rusty, clogged parts. What should have been a 45 minute job, took 3 hours.

My advice to locksmith and safe technicians is to give their customers two quotes on garage floor safes. One price if the safe is below the water line, and a different price if above the water line. All the metal parts were rusted beyond belief and the S&G 6730 looked like it had been brought up from the Titanic.

My thanks to your staff for your informative and very well done magazine. I've learned so much from your articles. Keep on being number 1.

Jerry Bertonneau
California

TNL

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Security Café

DROP IN FOR TOOLS, TECHNOLOGY & EQUIPMENT

Rutherford Cabinet Lock

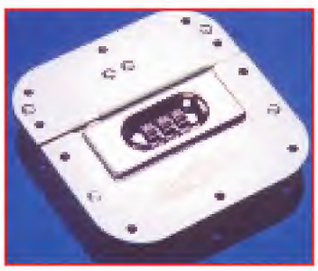
The Cabinet Lock by Rutherford Controls is the ideal lock to use in small areas and it takes only one second to reverse from failed locked to fail unlocked. The lock's catch bolt can be mounted on the side or the top of the lock, its flexibility is almost



endless. Applications include jewelry cases, key cabinets, drug cabinets, cash drawers, access hatches and more. An optional monitoring switch is another feature which allows even greater application versatility. This compact dual voltage lock features 100 pounds holding force.

Nielsen/Sessions Keyless Recessed Lock

Nielsen/Sessions now offers a keyless, streamlined lock that can be utilized on everything from cases to luggage and in virtually any industry.



The 604 series lock, designed by the Zero Corporation company, sets a new standard in case and contained hardware both in form and function.

The lock can be set and reset to any three digit number, eliminating the need to jot down or memorize combinations. The new lock is also recessed into a standard sized dish for improved safety and appearance. The unit is mounted by means of 10 rivets located around the combined lock and strike components.

Easy Add-On Brings Big Profits



Looking for big profits in a reliable and easy to install add-on product? Then consider the wireless drive up announcer from Optex. The outdoor PIR transmitter (model TN-2) transmits the radio signal 70 feet away to the 3 zone identifiable receiver chime (model RC-2). No wires to run. Installs in minutes. Transmitter operates on 3 AA batteries and will last approximately two years if the unit is activated 500 times per day.

KEY-BAK Super 48 Retractor

KEY-BAK division of West Coast Chain Manufacturing Company, manufacturer of the original KEY-BAK key retractor, announced an improved version of the popular device that incorporated several new design and performance features.

Designated the KEY-BAK Super 48, the new model has a maximum reach of 48-in., twice the length of the original KEY-BAK's chain. Instead of a chain , the KEY-BAK Super 48 employs a seven strand stainless steel cable encased in a protective nylon jacket. Rated at 95lb. breaking strength, the cable has a much greater strength to weight ratio than comparable chain.



Trimec Low Profile Strike

Trimec is proud to announce that the introduction of the innovative ES100 is the original low profile strike, just 11/8" total depth and offers 3000lb of holding force. The ES100 patented design allows it to be reversed from fail safe to fail secure in the field in about



45 seconds. The ES100 also has a continuous dusty solenoid and has been tested to 1,000,000 cycles. The ES100 has surpassed UL1034 at the highest standards for burglary resistant electric strikes.

BarLoc by Chicago Lock Co.

Chicago Lock Company has introduced BarLoc, which is loaded with unique new features not found in an ordinary square padlock.

BarLoc, which is offered in three body sizes, is designed with interchangeable shackles so that a locksmith can minimize his

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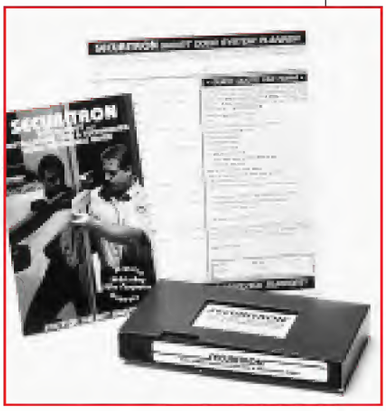


Chicago Lock Co.

inventory. He can configure and sell more locks from a smaller inventory of products. The shackles, available in three lengths for each body size are easy to change. a large plastic key handle provides ease of operation. As a convenience, the key may be inserted in either direction. Also thousands of key combinations are available.

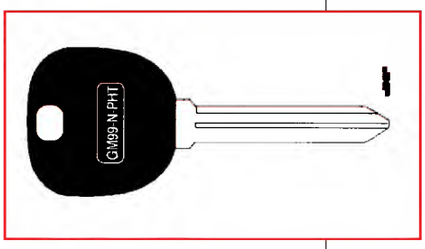
Securitron's New Installation Video

Securitron Magnalock Corporation has produced a "Site Survey and Installation Tips and Techniques" video for its quality line of electromagnetic locking systems. This entertaining and informative hour long "Smart Door" video highlights a typical location from site survey to system installation. The video is jam packed with tips and techniques to speed up and smooth out any installation challenges that may occur. Included is a useful 12 page reference guide to follow along with the video and a "Smart Door" system planner to help guide your next installation.



New Products From Jet

The GM99-N-PHT, Transponder Key Blank is Jet Hardware's newest innovation. No longer does the owners of Cadillac Seville's and future GM cars have to bring their automobiles with them to



duplicate keys. You can now duplicate as many keys as your customer wants beyond the manufacturers 10 key restriction with the GM99-N-PHT Transponder Key. When coupled with Jet's EDT-1 Electronic Decoder and Duplicator, locksmiths can now make as many copies as the customer wants and no longer has to have the automobile there. However, there is need to run out and program the keys in the car.

The Determinator

Car Openers Inc. has introduced a unique new tool called the Determinator. The Determinator allows a locksmith to originate keys for a variety of makes and models in just a few minutes. The Determinator decoding tool is reliable, simple, and quick. Available now are Determinators for Saturn, Chrysler, Nissan, Infiniti, Subaru, Ford 10 cut doors, and the Ford 8 cut lock system. The Determinator is so reliable and quick that it can be used as a car opening tool as well. It will replace endless rings of tryout keys. Future Determinators are in the works for GM 10 cut, Alpha Lock and many others. TNL



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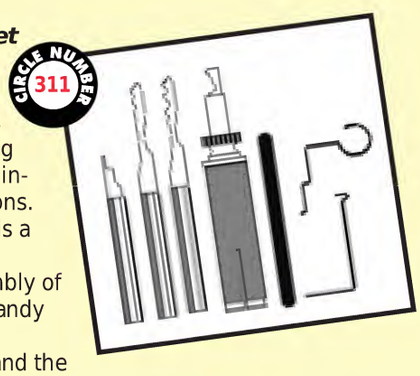
COVER STORY!

LOCKSMITH TOOLS!

Clichés can be so mundane, however there are a few that have withstood the test of time. One of them is: The right tool for the job makes all the difference in the world. It's an old saying, but it couldn't be more true. It doesn't matter what you do, if you're doing it with the wrong tool you're making life much more difficult than it needs to be. Tools are designed to not only make life and the job your doing easier, but safer and faster as well. Don't short change yourself. Get the tool(s) you need and live happily ever after.

Automotive

A-1 In-Dash Pick Set



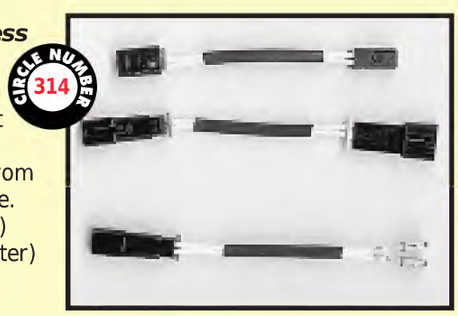
A-1 Security Manufacturing has recently introduced its new pick set for picking and decoding the new in-dash GM 10-cut ignitions. This set, number PS3 is a five to seven minute alternative to disassembly of the dash. Includes a handy tool for removing and reinstalling the bezel and the face cap, a specialized tension tool, rocker picks, cylinder release tool, and a decoder. No drilling is required and all ignition components remain in original condition.

AAble Locksmith GM Ignition Tool



AAble Locksmith has designed a tool to simplify the removal and replacement of the new GM ignition lock designs. The tool kit allows locksmith to remove the steel face cap in seconds. The drill guide is used to drill and access hole in line with the side bar, without hitting the hard plate or the side bar. The side bar can then be raked allowing the cylinder to rotate to the on position for fast removal. When finished it's a simple matter of replacing the facecap and reinstall the same lock.

BWD Vats Adapter Harness Updates



Update your VATS equipment with these three new harnesses from BWD Automotive. The LT6991 (top) and LT6990 (center) adapters allow current VATS Decoders/Interrogators to fit the three position connectors used on the 1997+Generation Five Corvette. These adapters are necessary for proper lock and VATS module diagnostics.

The LT6690 and LT6691 fit all VATS decoders regardless of manufacturer. The LT6992 (bottom) eliminates the need for buying multiple VATS ignitions by converting the standard VATS ignition, BWD LC1434 and Strattec number 700754/700938, to a 48-Pin connector.

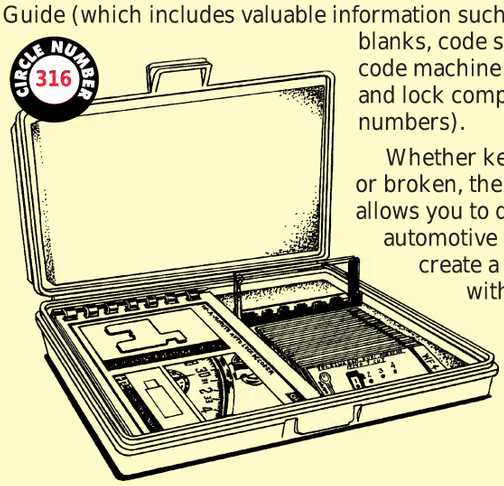
Curtis Number 15 Code Cutter



The Curtis number 15 code cutter is a fast, easy and complete hand held automotive code cutter. It features a patented design that allows the user to pre-set all cuts in a series and then quickly cut the key reducing the possibility of errors.

HPC Lock Decoder

HPC's in a minute auto lock decoder kit is a comprehensive all inclusive kit, allowing you to quickly and accurately decode automotive wafers and pins. It's simple and easy to use. The ALD-1 comes complete with one decoder stand, 35 decoder cards, and the Quick Reference Guide (which includes valuable information such as key blanks, code series, HPC code machine reference, and lock component part numbers).

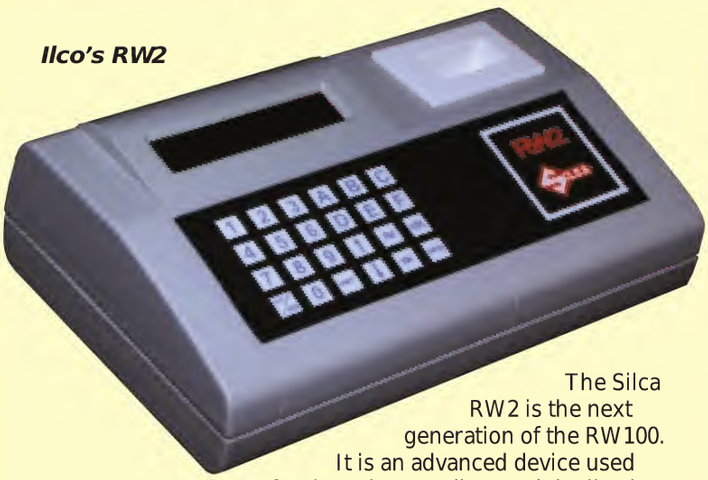


Whether keys are lost or broken, the ALD-1 allows you to decoded an automotive lock and create a new key without the original.

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Ilco's RW2



The Silca RW2 is the next generation of the RW100. It is an advanced device used for detecting, reading, and duplication transponder codes contained in the head of many new automotive keys. Both the chip type and transponder code are displayed and stored in the machines memory. Security is built into the system in the form of a unique password for each customer. Updates are provided biannually incorporating new transponder systems released in the automotive market. The RW2 is available with optional software or as a stand alone unit. The software will allow you to create a customer file and save it in an archive for future duplication.

Jensen 35 Piece Mini Adapter Tool Set

Jensen Tools now offers Moody's comprehensive selection of precision miniature tools recommended for use with the optional Utica" torque screwdriver (also shown), or any other 1/4" drive hand/cordless driver application.



Blades are hardened, black finished alloy steel. Set includes an insert bit adapter, a power drive bit adapter, and the following six categories of blades: slotted .025, .040, .055, .070, .080, .100; Phillips #000, #00, #1; Japanese Cross Point #000, #00, #0, #1; Torx/Tamper Torx T3-T6, T8, T10, TT8, TT10; Hex .028, .035, .050, .062, .078, .093; and Nutdriver 5/64, 3/32, 7/64, 1/8, 5/32". Made in USA

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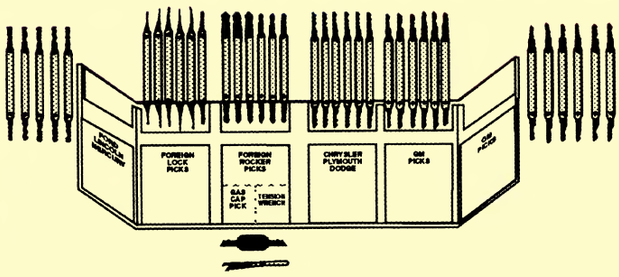
Keedex Tamper Resistant Screwdriver



Keedex's Tamper Resistant Screwdriver, can be invaluable for dealing with the Tamper Resistant Screws, found on many automobiles today. The Keedex Tamper Resistant Screwdriver, part #TAMPER, comes with eleven interchangeable tips. Includes the following tips: six tamper resistant torx tips (T10, T15, T20,T25, T27, and T30), three tamper resistant hex tips (5/32", 3/16" and 7/32") and two spanner tips (#6 and #8). All the tips fit into the screwdriver's storage handle.

Lock Technology Auto Kit

The Grand Master Auto Kit from Lock Technology contains 37 rocker picks to service locks for most import and



domestic glove boxes, trunks, ignitions and doors. It includes 12 GM rocker picks with 24 combinations for the over 1,000 GM side bar key configurations, six foreign rocker lock picks, five Ford rocker lock picks and six Chrysler rocker lock picks. The kit also contains a tension wrench and gas cap pick tool and comes in a custom leatherette case.



Strattec D.A.R.T.

Strattec's Diagnostic and programming tool(D.A.R.T.) is your key to the next generation of vehicle security. Many new Chrysler vehicles are equipped with Sentry Key Immobilizer System, which requires both the correctly cut key and coded Sentry





keyhead to start the vehicle. The D.A.R.T. lets you program the vehicle to accept new key codes(up to eight per vehicle). Keyhead codes can also be deleted if keys are lost or stolen. Built for years of rugged use, the D.A.R.T. is simple to use, with and easy to read LCD display and multiple function keypad to move quickly through operational menus.

Tech-Train Vats Interrogator/Reader

The Tech-Train 4004-A VATS interrogator is the smallest full featured interrogator on the market. This tool will interrogate and read all VATS systems and keys ever made. This includes the single sided system, the double sided system and the new double sided large bow Corvette system. All three systems can be interrogated through the ignition lock by means of the VATS bypass adapter that is included with the interrogator.



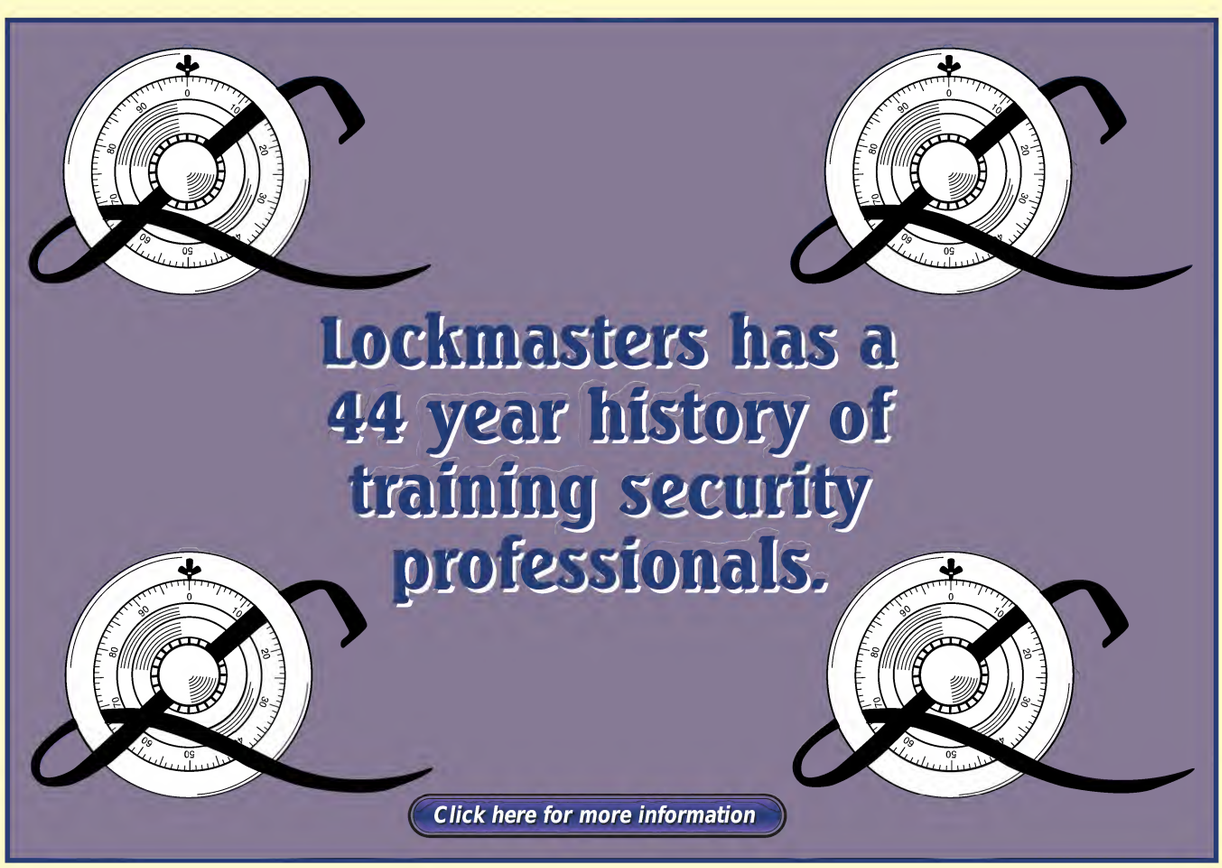
Truecraft Tools Five Piece Magnetic Ratcheting Screwdriver



Truecraft tools now offers a new light weight, patented palm drive five piece professional magnetic ratcheting screwdriver and bits designed for easy operation.

The set consists of ratcheting screwdriver and four interchangeable bits in the four most popular bit sizes 3/16" and 1/4" slotted in addition to number one and number two Phillips. The anodized duralumin shaft maximizes the magnet power and prevents oxidation. The extra strength long life magnet holds bits secure.

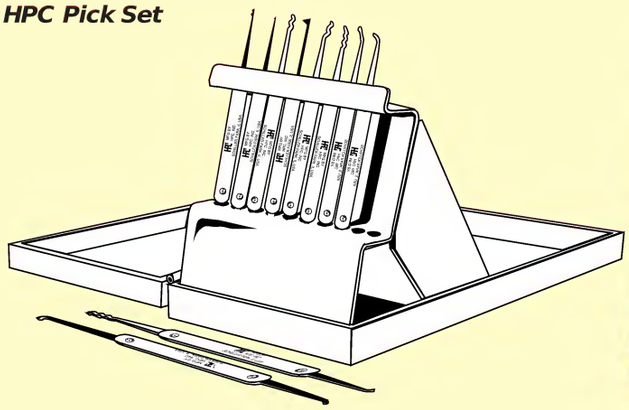
The patented palm drive roto-cap allows for easier operation. The pop-up cap allows for easy access to the four bits, while the convenient see through storage compartment in the handle holds the bits. The screwdriver set features many added benefits.



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Bypass Tools

HPC Pick Set



The new HPC executive pick set is the most convenient way to reflect your professionalism. This handsome steel case flips up and holds all eight of HPC's new two-in-one picks (stainless steel blades on one side and spring steel blades on the other) and two, two-in-one extractors, plus two tension tools. When open and propped up the executive pick set displays this generous assortment of spring and stainless steel tools conveniently within your reach. When closed, your tools are protected within a custom made, all steel case. This is the ideal set for professionals deserving the best.

Singertech Neutralizer



Singertech's lever neutralizer is a new tool that allows disassembly and opening of doors with Schlage Rhodes and other grade one and two levers without working keys. No special technique is required. It enables the user to consistently defeat levers in less than sixty seconds without damage to the lock. What a time saving tool for opening locks with high security cylinders and locks that will not yield to picking attempts.

Door Hardware

A-1 Simplex/Unican Jig

A-1 Security Manufacturing has introduced a new jig for quick and professional installation of Simplex/Unican series 1000 locksets. The number J-50 is a well suited for new and retrofit installations on 1-3/4" doors. Simply clamp the jig to the door and begin drilling. A-1 plans to introduce a similar jig for Trilogy in the fall.





Keedex's Spin Out

The "Spin Out" by Keedex, Inc. removes even the most stubborn cam screws from mortise cylinders. The Spin Out features a screwdriver with an oversized handle for extra torque. Includes four sizes of interchangeable screwdriver bits two slotted and two Phillips.

Safe Tools

MDS Fiberscope



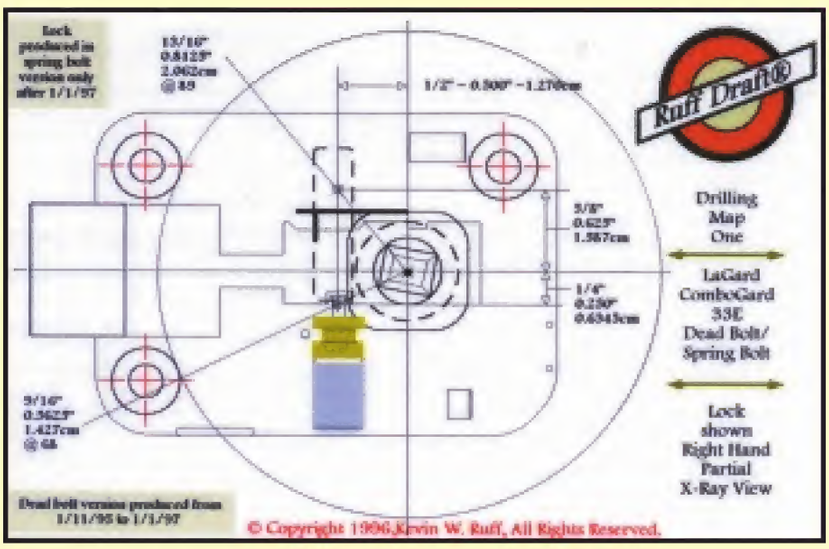
MDS Inc announces the recent introduction of a complete video system which includes their new Rod Lens PS100 Borescope.

Their state of the art Fiberscope has been designed to be far superior to the Gradient Lens System introduced last year. The PS100 offers a true 95 degree image and eliminates the need for slide on mirror tubes.

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MBA Drilling Maps



MBA offers two new drilling templates, one for electronic locks made by LaGard, the Combogard 33E, 33E Side Bar, and the Safegard 3600 Swingbolt. The Miscellaneous Map Set includes the Amsec KFI2000 and ESL 10/20 and the S & G 6120/40. Each map is dimensioned computer drawing of the lock plus specifications and drill point locations plus lots of good tips about drilling on the back of every map.

Lockmasters" New Magnum Bullet' Drill Rig



The bullet is a heavy duty companion drill rig with the same powerful drill capacity as the standard four, five, and seven Magnum. Designed with new barrel and quill assembly technology, the Bullet is lightweight, quick and easy to set up, and offers template drilling. The template provided with the bullet includes drill points for the fence lever screw, relocker and scope for S&G, Ilco, and LaGard locks.

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StrongArm MiniRig



The new StrongArm MiniRig Pro Kit is a versatile, compact and cost effective safe drilling system. Fast and easy set up, template drilling, and quick disconnect for changing drill bits or working in the hole, make safe drilling faster, easier and more profitable. The fitted case includes: The MiniRig, S & G, Mosler, Diebold and LaGard drilling templates and a dial puller for all types including X-07. Optional electronic lock templates, and GSA bolt cutting guide shown are available. TNL

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COVER STORY!

T. G. I. F.



by
Jake Jakubuwski

The title of this article might mean different things to different readers. If you've had a less than serene week, it could quite possibly mean "Thank Goodness It's Friday!" If you're not quite sure what to do or how to do it you might get back to basics and put the title of this article on the toes of your Reebok shoes to remind you that "Toes Go In First!" Or, T.G.I.F. could mean "This Gadget Is Fubar." (Fubar being an acronym for: "Fouled Up Beyond All Recognition.") Yep! Depending on your point of view, and your state of mind, T.G.I.F. can mean many things. However, in the context of this article it means "This Gadget Is Fantastic!"



1. The RQ scope with AngioLaz VBS-1 monitor and camera.

Actually, there are five separate T.G.I.F.'s in this article. A DeWalt 18-volt cordless drill that I bought to replace an older DeWalt that had given up the ghost; a fabulous scope, camera and monitor from RQ Associates; a neat set of padlock bypass tools from Lockmasters; Major Manufacturing's HIT 452 Adams Rite installation jig; and Jet's EDT-1 Transponder Decoder.

Last Monday I had several jobs that allowed me to utilize each of these fantastic gadgets on the same day. Over the weekend my friend Ellis Gibbs, called and asked if I'd like to come down and help him open an Gary TL-15 that he had in his shop. Of course I said yes and told him I had just received a new scope and monitor and this opening would be a great opportunity to try it out. *(See photograph 1.)*

I also scheduled a job to prep a narrow stile aluminum door and install an Adams Rite deadlatch and push paddle. Another was to remove some padlocks from a couple of vending machines, install a half surface corrective hinge on a restaurant door and duplicate a couple of transponder keys for a car dealer. That was going to be my adventures in a day in the life of a locksmith.

DeWalt Drill and RQ Associates Borescope

When I arrived at Ellis' shop, he had already removed the cover plate from the top of the Gary fire safe and marked his drill point. Since the lock would not respond to manipulation and we had no idea what was wrong with it, if anything, we decided to put a hole through the top and continue the hole into the rear edge of the lock case which was mounted vertical down (VD) to scope the wheels.

I asked Ellis if he wanted to see if my new DeWalt 18 volt battery operated drill had enough "Oomph" to penetrate the

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relatively mild steel that made up the half-inch thick inner wall of the safe. He said "Why not?" *(See photograph 2.)*

Photograph 3, shows Ellis bearing down on the DeWalt to penetrate the inner wall. Not only did the DeWalt do itself proud penetrating the body of the safe, it had enough "oomph" to penetrate the lock case, as well as drill holes I needed later that day to mount a pivot hinge and the pilot holes to prep a narrow stile aluminum door!

As planned Ellis penetrated the safe body and straight into the top of the lock case. *(See photograph 4.)* With the lock case drilled and our scope inserted inside the case we had a perfect view of the fence and wheels. The RQ scope with AngioLaz VBS-1 monitor and camera that was used for the opening is a great setup. The view through the scope is crystal clear and the camera and monitor reproduce the image vividly.

All we needed to do now was align the wheel gates under the fence as seen in *photograph 5*. After that was accomplished it was just a matter of bringing the drive cam gate around, vibrating the fence (dead blow hammer-type vibration) into the gates and retracting the bolt.



3. Ellis bearing down on the DeWalt to penetrate the inner wall.



2. DeWalt 18 volt battery operated drill.

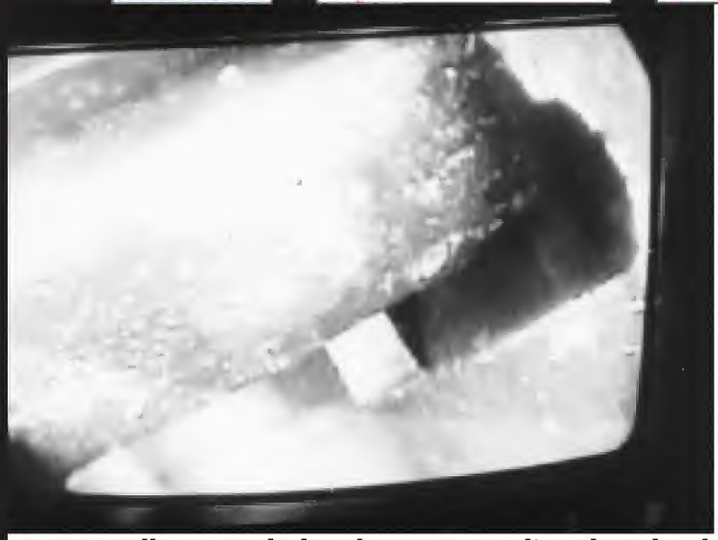


4. Ellis penetrated the safe body and straight into the top of the lock case.

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5. All we needed to do now was align the wheel gates under the fence.

If I had not been stopping Ellis every ten seconds to take a photograph, this safe would have fallen victim to Ellis and the RQ scope, camera and monitor in about fifteen minutes or less.

Even though this scope is not considered long enough to perform a top opening procedure on most safes, this particular Gary was short enough to allow us to view the lock case from the top.

Dave McOmie once referred to this scope as his favorite and I can see why. It's a 3/16" diameter, fixed focus scope with a 80° field of view. Coupled with a 30° forward viewing angle this is an awesome and viable tool for the professional safe technician. You can actually see straight ahead and to the side at the same time! Personally, I wouldn't want to go on another safe opening without having this unit in my van.

My next stop was a restaurant with a broken hinge on the back door. Here I once again used my new DeWalt 18-Volt cordless drill (same battery charge we used on the safe) with a driver bit to remove the screws securing a broken hinge to the door. The drill was then used to drive more screws to attach the new hinge to the frame. Finally, I drilled the holes for the grommet nuts and through bolts that secures the half-surface hinge to the door.

Soon it was lunch time, and since I try to miss as few meals as possible – and since I was already at one of my favorite eateries – I decided to take a break and fortify myself for the afternoon's labors.

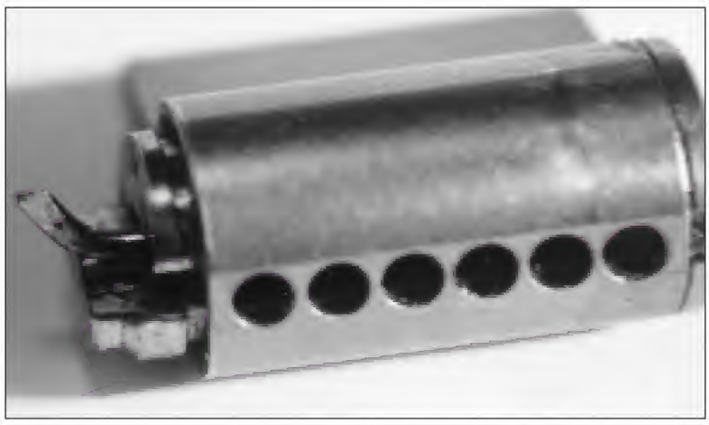
Lockmasters AM700 Pick

The next job was removing the padlocks from two vending machines. I took along several bypass tools from Lockmasters. *(See photograph 6)*. It turned out that the padlocks were American 700's and Lockmasters AM700 Opening Tool made short work out of both of them. The pick is designed to bypass the lock cylinder *(see photograph 7)* and attack the spring loaded retainer cam in the lock body.

With the pick inserted in the keyway the tip of the tool is positioned on the spring loaded retainer cam. *(See photograph 8.)* Once in position, simply rotate the pick to turn the retainer cam and the lock will open. After the lock is opened, it's simply a matter of decoding the cylinders and generating a new key.



6. Several bypass tools from Lockmasters.



7. The pick is designed to bypass the lock cylinder.

This pick is designed to bypass and open most older style American 700's. It will not work on many of the newer 700's where American has inserted a blocking shim to prevent attacking the cam.

Thanks to the Lockmasters AM700 tool, the entire job was completed in just under thirty minutes with no drilling or aggravation.

Major Manufacturing's Hit 452 Adams Rite Jig

The door that I had to install the Adams Rite on had a built-in push bar on the inside with concealed vertical rods. Since, over the years, I had installed Adams Rite dead latches and paddle handles on the other narrow stile aluminum doors in the facility, the maintenance director asked me to deactivate the vertical rods and put the Adams Rite package on this door as well.

This meant that I had to do the door prep for the Adams Rite combination as well. It's no sweat if you have Major Manufacturing's Hit 452 for doing Adams Rite preps on narrow stile doors. After taking the door down, removing the vertical rods and re-installing the door, I clamped the Hit 452 to the door. *(See photograph 9.)*

With the Hit 452 clamped in position I drilled pilot holes and then routed out a neat, clean, dead-on prep. *(See photograph 10.)* With the hard work finished I installed the Adams Rite latch, cam and paddle handle. *(See photograph 11.)*

Not counting taking the door down, removing the vertical rods and re-hanging the door, the door prep took less than ten minutes with the Hit 452. I mean, it was simply a matter of clamping it on the door – it's self-centering – drilling pilot

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8. With the pick inserted in the key-way the tip of the tool is positioned on the spring loaded retainer cam.



9. Major Manufacturing's Hit 452.

holes for the cross-bore and the face cut and routing them out. The Hit 452 (in my humble opinion) is one Fantastic Gadget, and if you do any amount of narrow-stile installs, you need one of these on your truck.

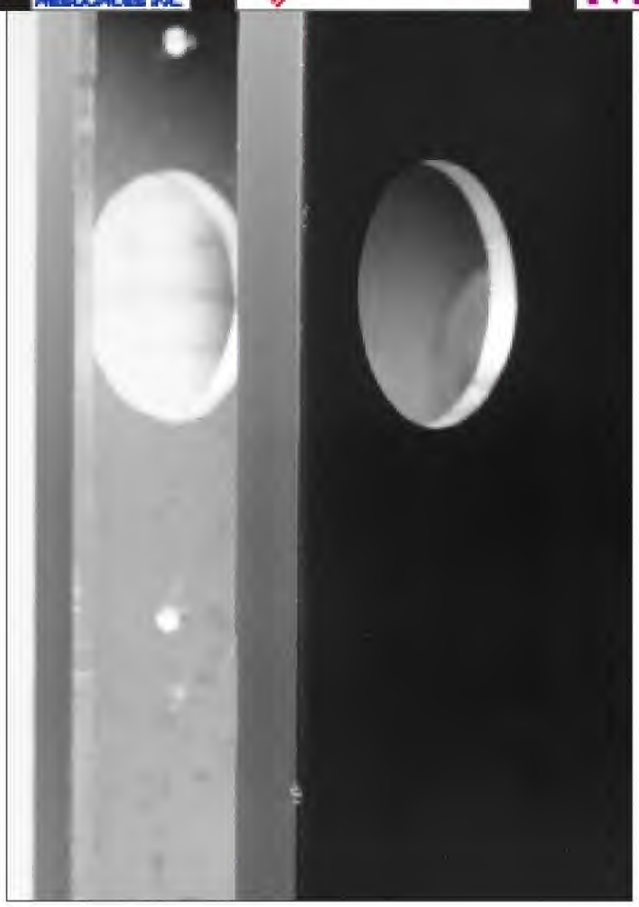
Jet ETD-1 Transponder Decoder

Transponder keys have been causing a lot of automotive locksmiths to wonder if they can afford to keep up with the rapidly changing technology. The Jet ETD-1 Transponder Decoder is not only affordable, but can help take a lot of

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10. I drilled pilot holes and then routed out a neat, clean, dead-on prep.

aggravation out of the necessary task of duplicating transponder keys. *(See photograph 12.)*

The ETD-1 allows you to copy most of the known systems (Phillips, Nova, Temic and Megamos) currently being sold today easily and accurately. The ETD-1 can operate off 110VAC for in shop use or off a 9-Volt battery for mobile applications.

The EDT-1 is simple to operate. Once you turn it on, all you need do is follow the display prompts. For instance:

In the battery mode, switch the EDT-1 on and push the green Read button. The display will read: "Insert Security Key" which is the one with the red bow. *(See photograph 13)*. The display will show the security key code. *(See photograph 14.)* Inset the security key and push the green Read button a second time and the display will read: "Insert Car Key-Press Read"

NOTE: Do not insert the security key during any other procedure, as you risk rendering the security key inoperable.

Insert the car's key and push the green Read button and the display will tell you the type of device you are decoding such as: Phillips, Megamos etc.

Push the green Read button again and the transponder's secret code will display. Remove the customer's key and push the green Read button again and the display will read: "Insert New Key And Press Write." Now insert the key to be duplicated and push the red Write button. The display will read: "Writing Successful." At this point you are free to duplicate the mechanical portion of the key on your favorite duplicator or clipper.

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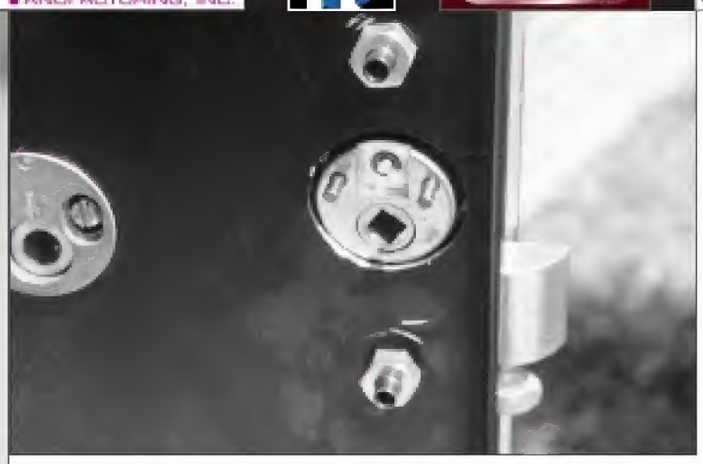
SRi and Steve Young are working together to bring you the best in locksmith tools and supplies.

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11. I installed the Adams Rite latch, cam and paddle handle.

The ETD-1 is equipped with a serial port which enables the user to connect with a PC to record the transponder codes if desired. For security reasons, the operator would need to have both the PC and the ETD-1 connected to reproduce customer keys. The software, which is optional, requires specific information about the customer be entered regarding make, model, VIN and personal data that will identify the specific customer.

Like I said earlier this unit is fast, easy, accurate and about as foolproof as it can get.

This was one of those days where Murphy stayed home in bed and those Fantastic Gadgets all did the job the way they were supposed to. But, it was a long day, which still made it a T.G.I.F. kind of day as in: Thank Goodness I'm Finished!

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12. The Jet ETD-1 Transponder Decoder.

13. The display will read: "Insert Security Key" which is the one with the red bow.



14. The display will show the security key code.



For more information about any of these Fantastic Gadgets, call you favorite distributor. If you're distributor can't help you call:

DeWalt's 18-volt battery operated drill can be found in most any home center, builder's supply or hardware store.

For the borescope, camera and monitor, call RQ Associates at: 313-671-2359.

For the HIT-452 Template and Router Jig, call Major Manufacturing at: 714-772-5202.

For the padlock bypass tools, call Lockmasters at: 1-800-654-0637.

For the EDT-1 Transponder: Jet Hardware Manufacturing at: 1-718-257-0973.

Tell 'em Jake told you to call. Y'all heah me now? TNL

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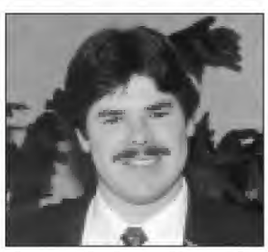
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The 1996 Camaro and Camaro Convertible. The Camaro is also equipped with an AIRBAG. The Camaro uses the single sided VATS system for the primary key and the standard GM "H" keyway, found on several late model GM products, for the secondary key.

The 1996 CHEVROLET CAMARO!

This time out we take a look at the 1996 Chevy Camaro. This car is made alongside with the Pontiac Firebird.



by Michael Hyde

OPENING TECHNIQUE



To open this car we used two wedges and a horizontal slide linkage tool. Insert the tool a few inches past the door handle, on the passenger side of the car, towards the front of the car.

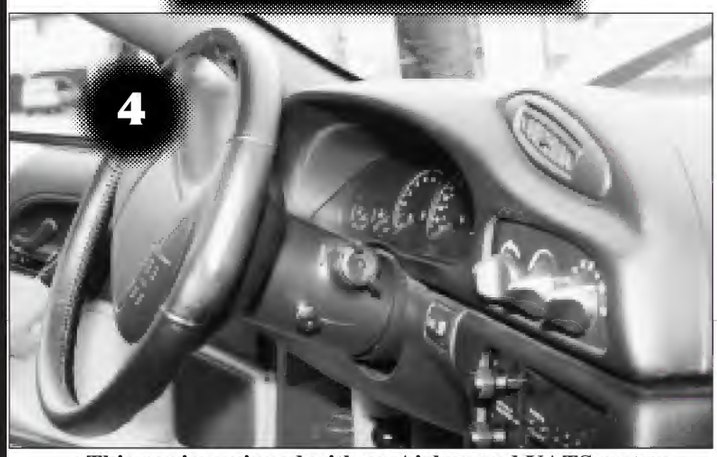


Insert the tool straight down and make contact with second horizontal linkage rod, bind the linkage rod and slide it forward to unlock the car.

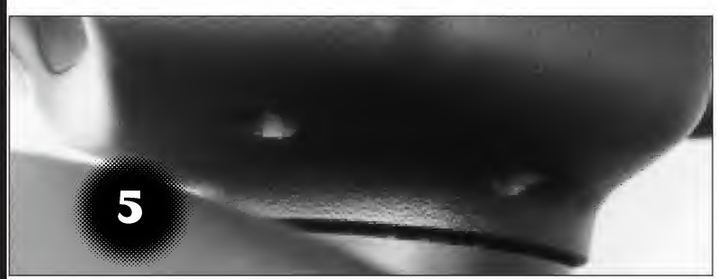
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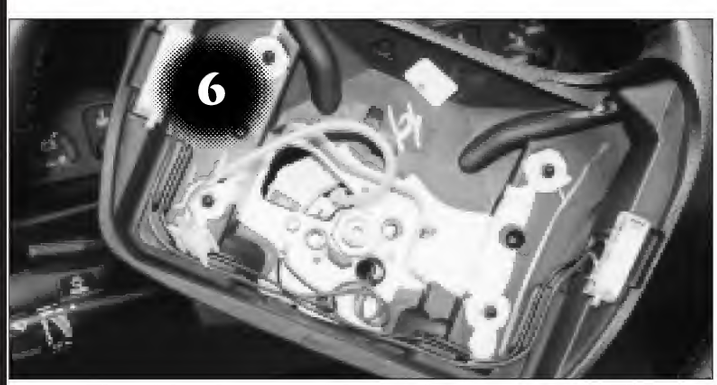
IGNITION SERVICE



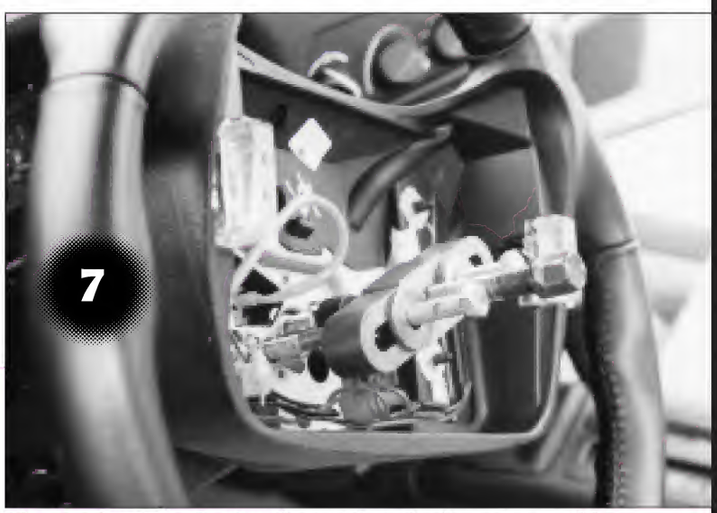
This car is equipped with an Airbag and VATS system (PASSKEY II). To service the ignition it will be necessary to remove the Airbag & steering wheel.
Before you do anything more, you must disconnect the battery. I strongly recommend taping the terminals, thus preventing someone else from coming along and re-connecting the terminals. You must wait at least 25 minutes before removing the Airbag after the battery has been disconnected. This waiting time will allow the Airbag computer capacitor to drain down. While waiting, I suggest making the secondary key to occupy your time.



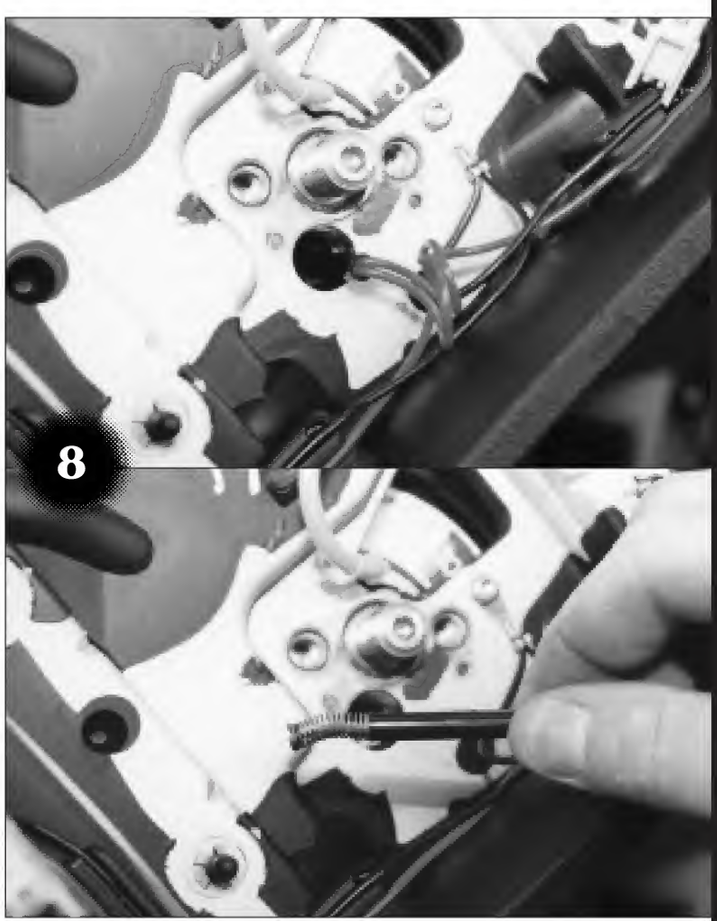
To remove the Airbag, you will need to loosen the four machine thread bolts, located on the back side of the steering wheel. Two bolt on each side. The bolts will not come all the way out, but need to be loosened evenly. This will require a TORX #30 driver.



The Airbag has a special type of connector on it. The connector has a colored keeper, preventing the connector from uncoupling. Remember when re-assembling to re-install the keeper. Place the Airbag in a locked container, such as the trunk, for safety reasons.



Place a steering wheel puller on the wheel as you would any other GM column, just be mindful of the Airbag wiring. Do not tighten the puller bolts any farther than five turns.



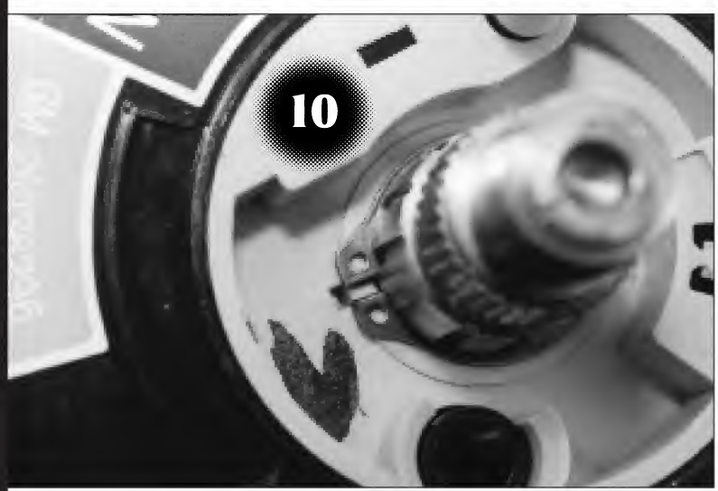
After you have loosened the wheel remove the spring loaded horn wire connector. Also be careful as you slide the Airbag wires through the steering wheel.

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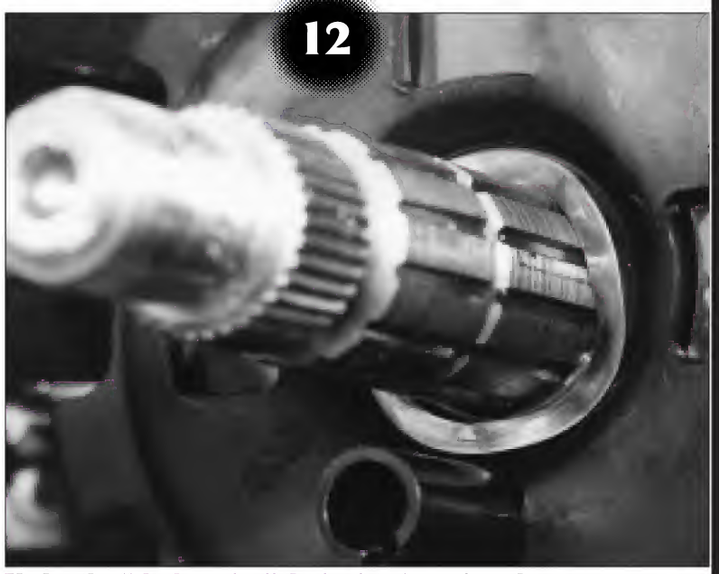
A view of the steering column with the yellow and black Airbag "clock-spring" device exposed.



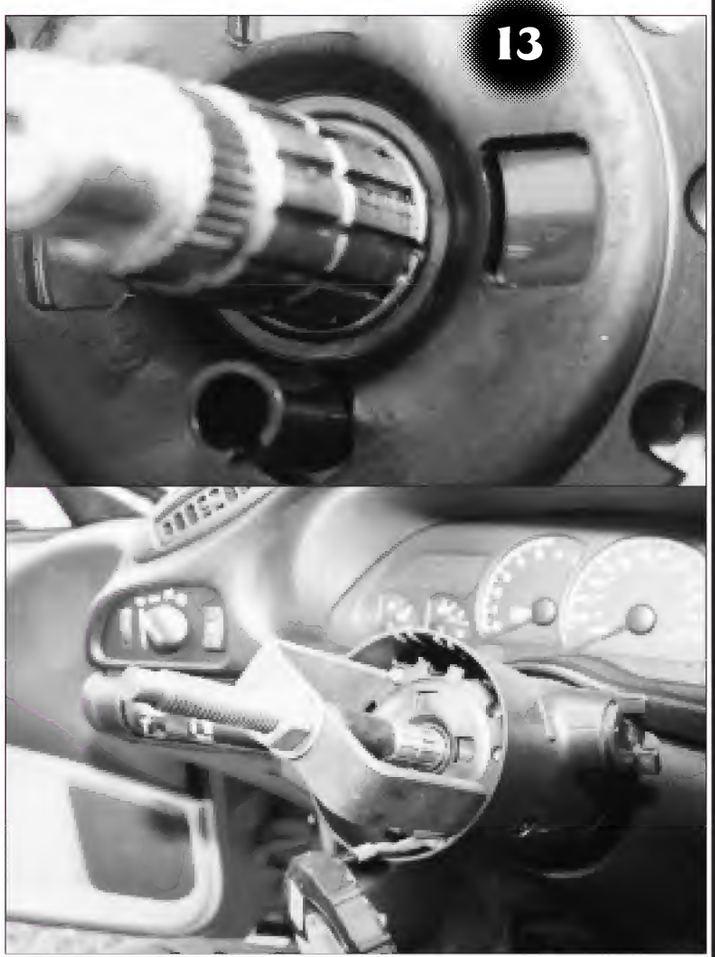
Remove the tru-arc ring that holds the device in place. Gently pull outward on the device and let hang out of the way. As long as you do not turn the inner section of the "clock-spring" device you can re-install it without further complications.



It will be necessary to remove the emergency flasher switch with a small phillips-head screwdriver.



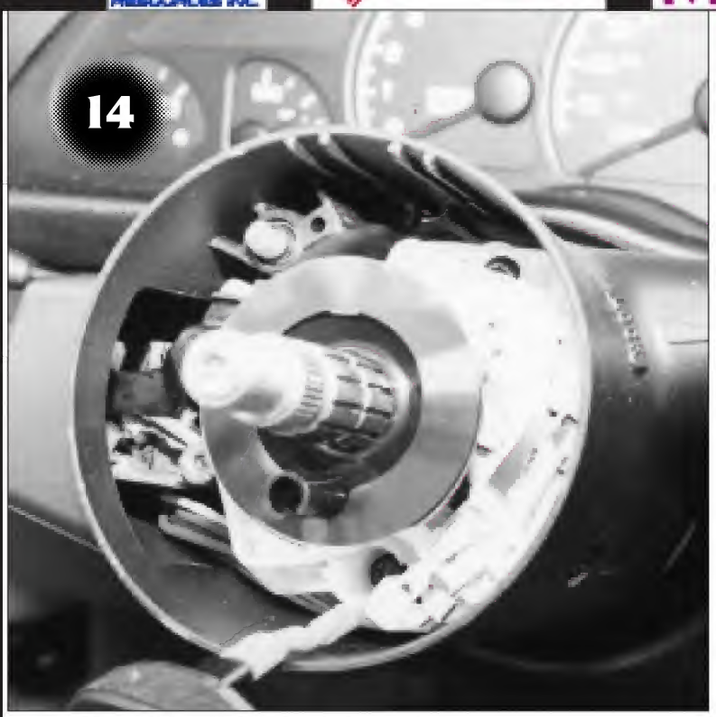
Under the "clock-spring" device is a 'wave' washer.



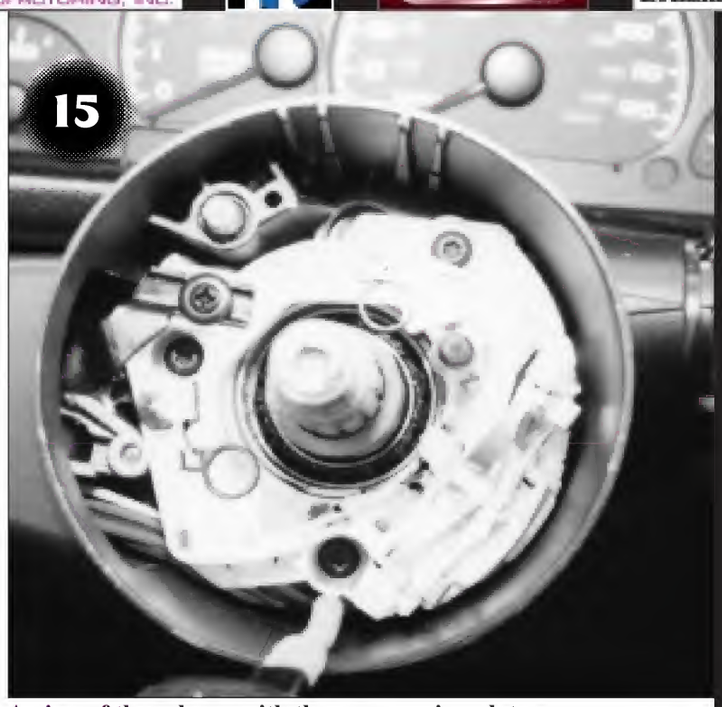
Under the wave washer is the standard GM compression plate ring. Use a compression plate tool to push down on the plate allowing you to remove the ring.

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Next slide off the plastic horn ring.



A view of the column with the compression plate removed.

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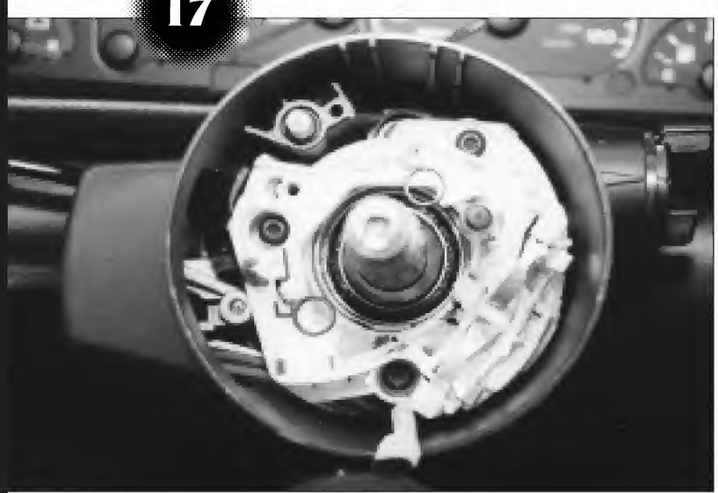
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16

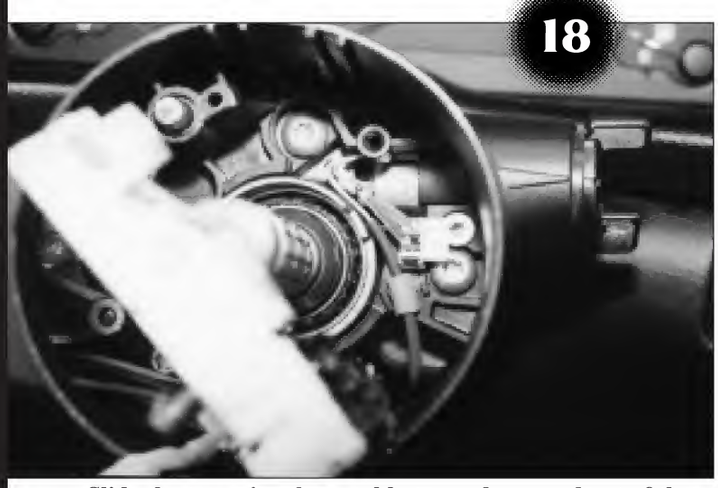
Remove the turn signal arm screw.

17

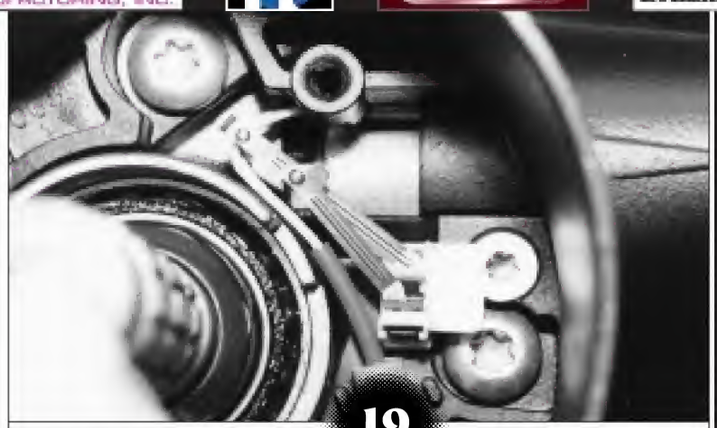


Remove the three Torx screws from the turn signal assembly.

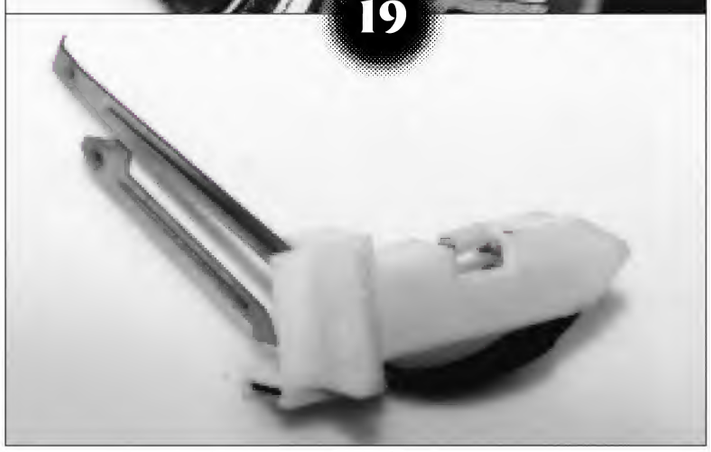
18



Slide the turn signal assembly toward you and out of the way. Take your time and be careful.

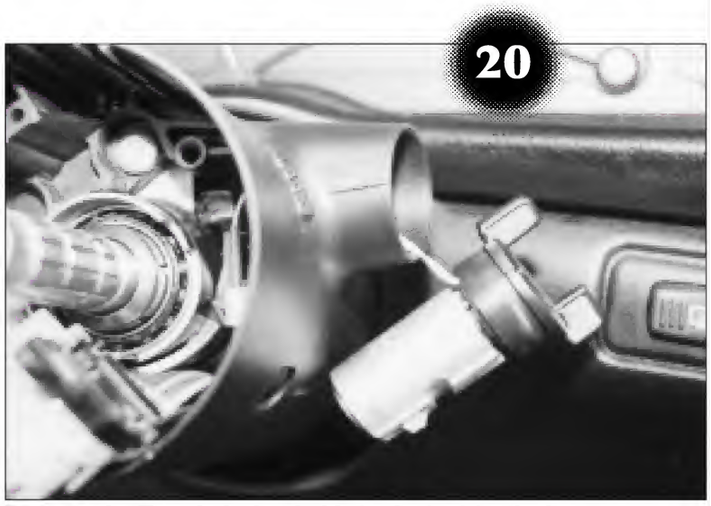


19



Take special note of where the VATS wires are located. It is important the wires are resting in the exact same spot as you found them. The key buzzer slides out easily to gain access to the lock cylinder retaining bolt.

20



Remove the Torx bolt that holds in the ignition lock cylinder and gently pull it out to see if there is a code on it. This cylinder had two sets of numbers on it, one is the code number. Some production line ignition cylinders DO NOT have a code on them.
If your intention was to replace the cylinder or disassemble it to make a key, then you would have to disconnect the other end of the orange wiring connector and feed it through the column. This can be a tricky task. You can not pull on the wiring with any force or the wires will break. The wires are flexible, but very delicate. Tape another wire to the end of the connector to allow you to feed it back through the column.

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A view of the ignition switch removed from the column.





To disassemble the lock it will be necessary to gently remove the stop ring on the back of the cylinder plug. Gently wedge it from side to side evenly, or the ring will break.



You must remove the cylinder plug keeper to allow the cylinder plug to slide out of the housing. Insert a pin punch tap out the keeper. The plug will now slide out of the housing without a key.



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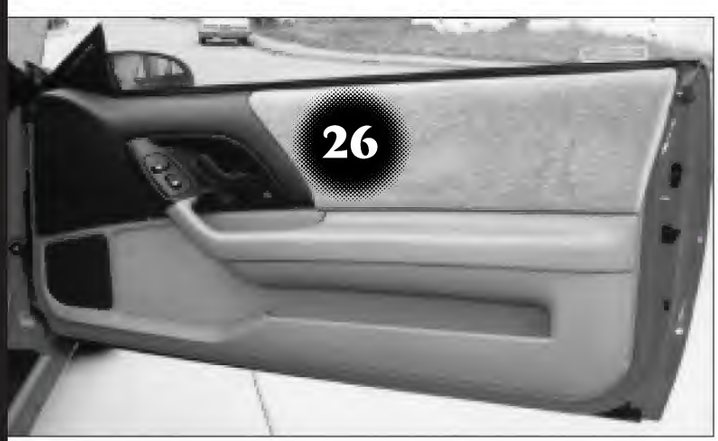


The ignition lock cylinder disassembled and the cylinder plug.

DOOR LOCK SERVICING



A view of the outside door lock and handle.



To service the door cylinder it will be necessary to remove the door panel first.



Remove the two phillips head screws on the door pull cavity.



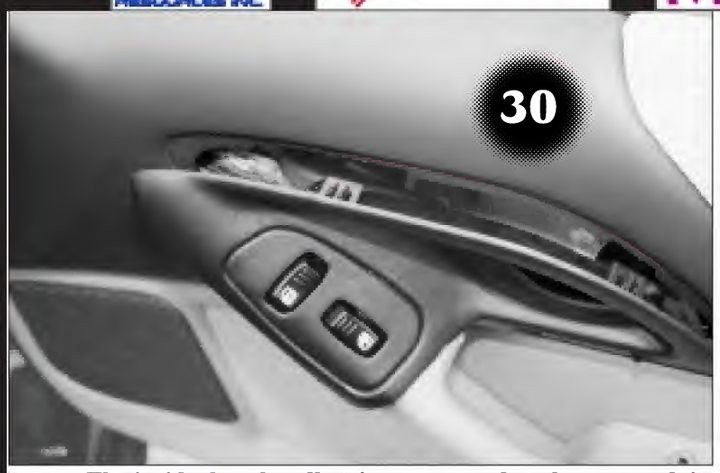
Remove the phillips head screw next to the inside door handle.



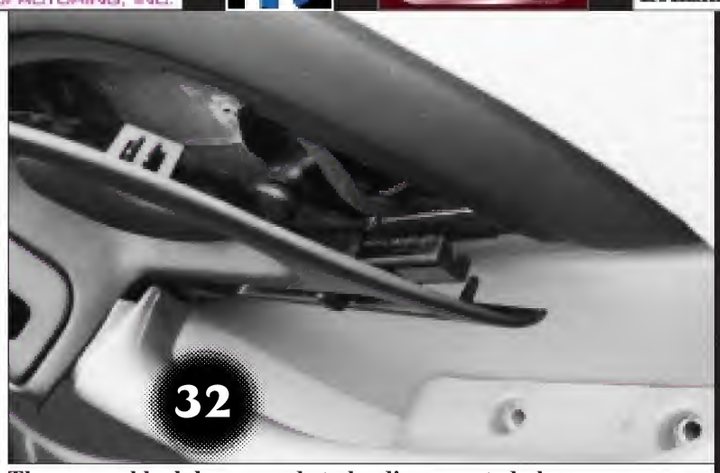
Remove the two phillips head screws on the side of the door pull. One screw is exposed and one is recessed in the door pull.

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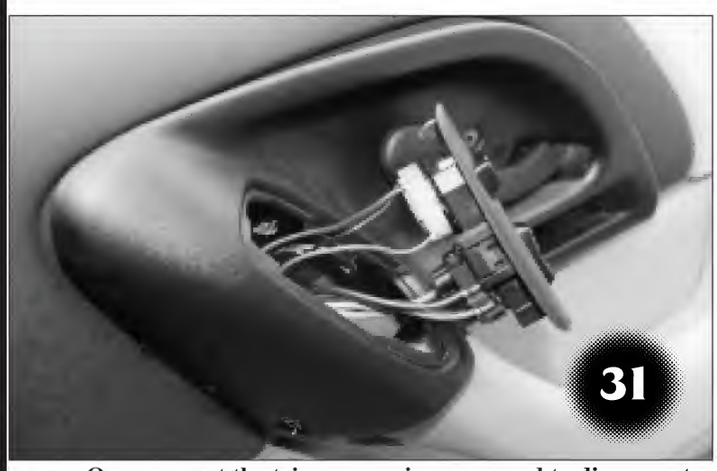
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The inside door handle trim cover needs to be removed, it unsnaps.



The manual lock lever needs to be disconnected also.



Once you get the trim cover ajar, you need to disconnect the power window and power door controls.



A view of the trim cover removed from the door panel.

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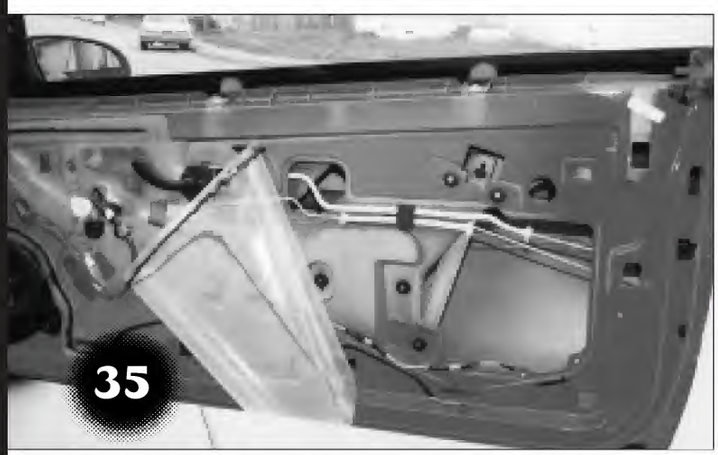
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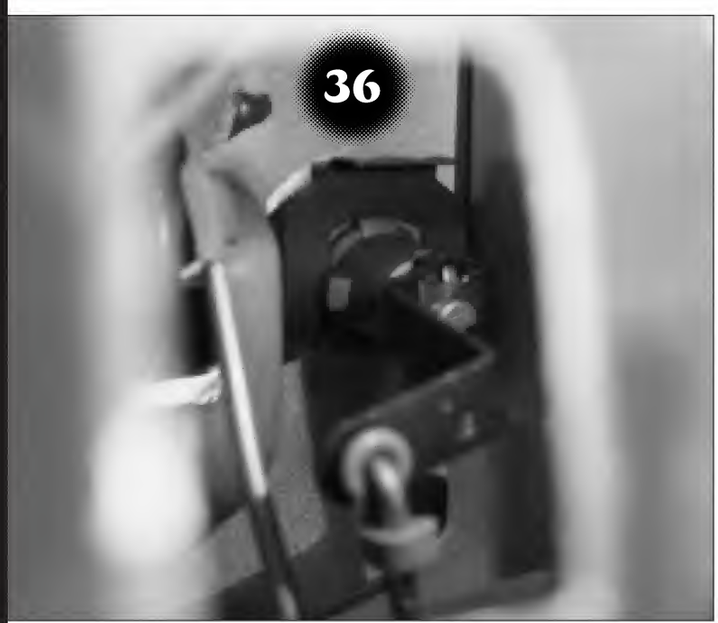
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The door panel uses hooks inside of the more common push in plastic clips. You must lift up on the panel to remove it.



A view of the door with the door panel removed.



A view of the door lock cylinder as it sits in the door. The lock is held to the door by a horseshoe clip. One of the nice things about several late model GM cars is that they use a plastic easy-to-use linkage rod clip.



The lock cylinder is pictured with its long tailpiece.



To service the lock cylinder you must remove the face cap and the retainer on the tailpiece to slide the plug out of its housing. The replacement face cap number from Strattec is #322658.



The complete door lock cylinder disassembled.

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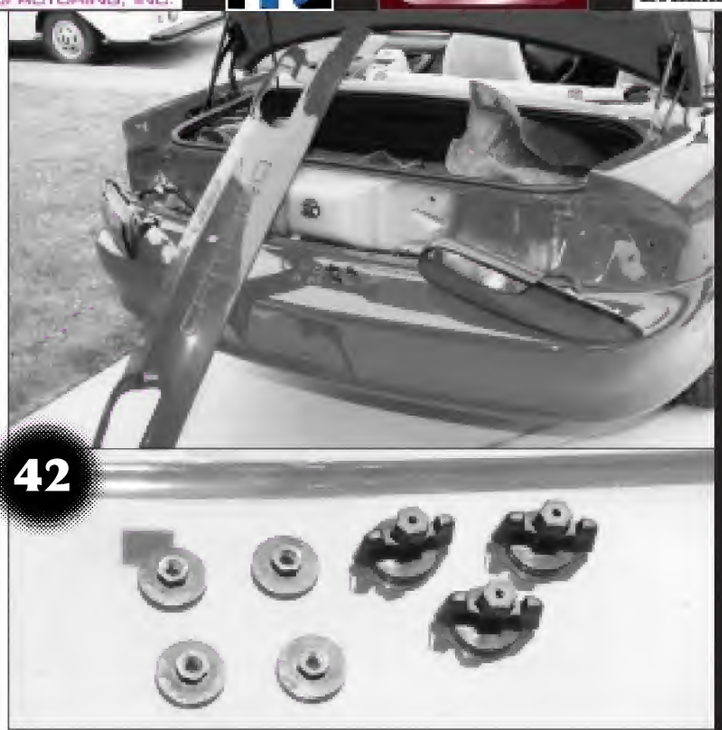
TRUNK LOCK SERVICING



A view of the trunk lock.



The door panel uses hooks instead of the more common push-in plastic clips. You must lift up on the panel to remove it.



To get to the front of the lock cylinder you must remove both taillight assemblies and the center trim body panel. The body panel is held to the body of the car by four 8mm nuts. The taillight assemblies are held to the body of the car by four large plastic nuts. Be careful when removing the nuts as they can fall down inside the cavities of the body panels, never to be seen again. That is why one of them is missing in the photograph.

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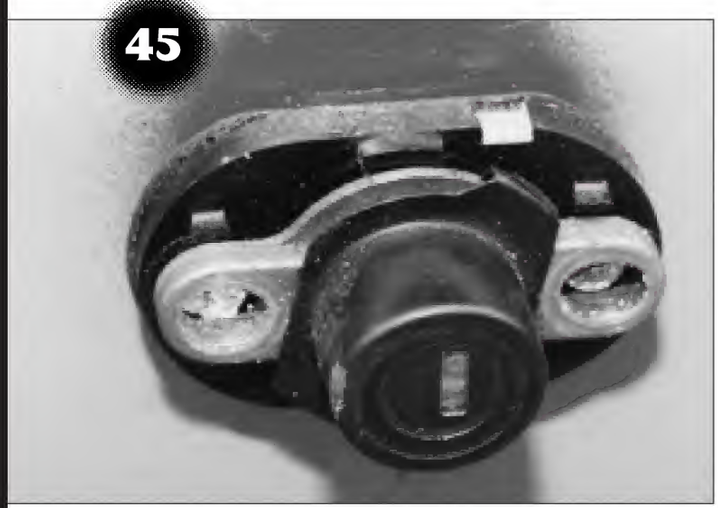
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The lock cylinder is held to the sheet metal body of the car by two aluminum rivets.



A view of the backside of the lock cylinder.



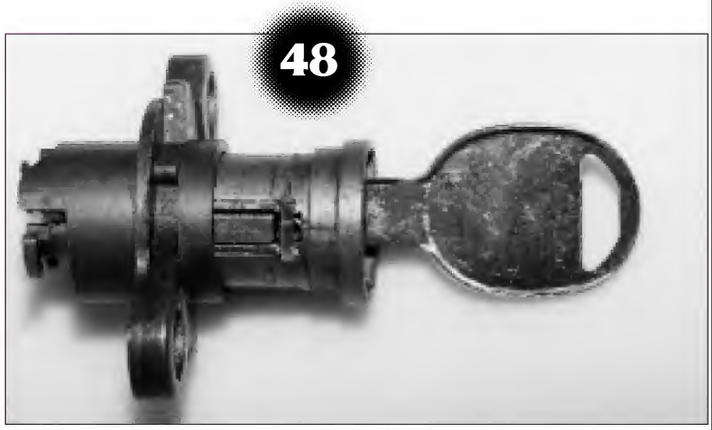
You must drill out the rivets to get the lock out. Secure the lock cylinder back in place by either new rivets or bolts.



A view of the trunk lock cylinder removed from the car. Notice the long tailpiece.



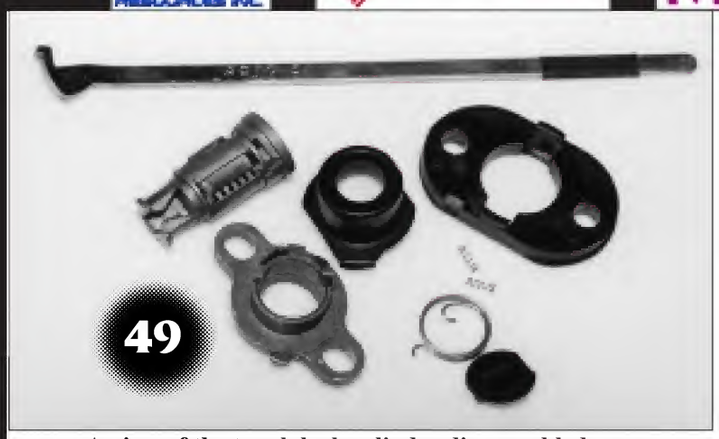
Notice that this lock uses what is referred to as a 'stove top' face cap. The tabs of the cap are bent over the protrusions in the lock cylinder housing.



To remove the cylinder plug you will need to insert the working key and rotate the cylinder plug to remove it. If you do not have a working key then you can drill a small hole in the cylinder housing and put pressure on the side bar while you 'rake' the tumblers.

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A view of the trunk lock cylinder disassembled.

GLOVEBOX LOCK



The glove box cylinder is easily serviced when removed from the glove box door.



There are two 8mm bolts that must be removed to get the lock out of the glove box door. There are places for three bolts but only two are used.

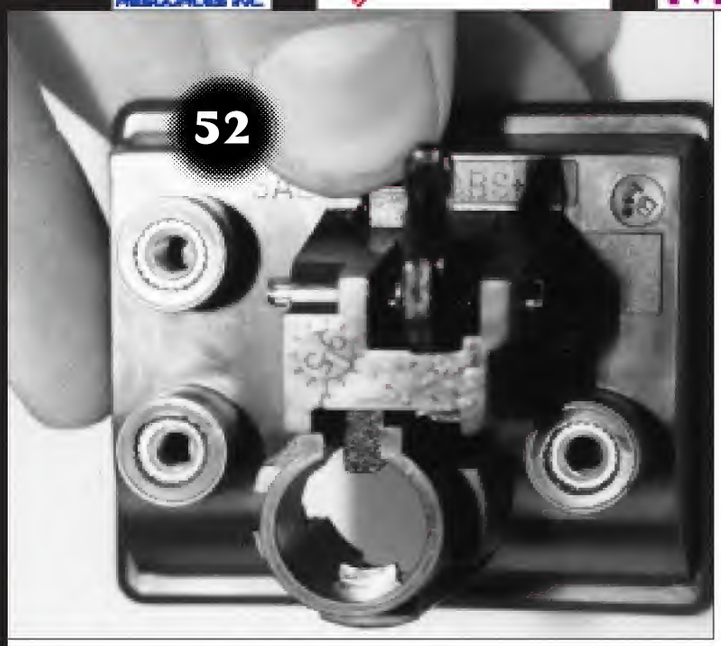
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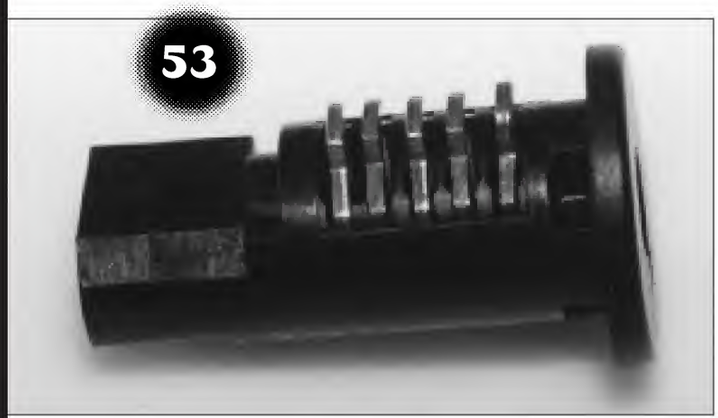
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The cylinder plug must be rotated to the locked position and then while picking the cylinder you must depress the retainer tumbler so as to rotate the cylinder even more for removal. The cylinder plug must pass the ward in the latch/lock housing before it can slide out. Remember the latch itself must be in the closed position to allow the plug to turn. A view of the ward is shown.

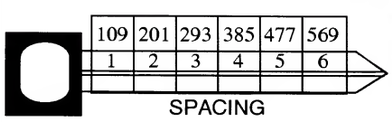


The cylinder plug contains four tumblers in positions 3 through 6.

OEM PARTS:
The keying kit from Strattec is part number #608771.
The ignition cylinder part number is #700754.
The door lock service package part number is #702266.
The trunk lock cylinder service package is #700508.
The glove box cylinder plug is part #380784.
The glove box lock latch housing part number is #700984.
Method #1. Call Chevy Road-side for the key codes.
PRIMARY KEY
Method #2. Remove Ignition lock and read code stamped on lock, and make primary key.
SECONDARY KEY
Method #3. Remove glove box lock, disassemble to get the 4 out of the 6 cuts necessary to make a working secondary key, in positions 3 through 6.
Here is a GM progression chart for making a completed key when you have 4 of 6 cuts.
If the 4 known cuts equal a even number:
If the unknown cuts are next to a:
1 = 1st key-11,13, 33 / 2nd key-22,42,53 / 3rd key-31.
2 = 1st key-11,22,24,44 / 2nd key-13,33,53 / 3rd key-31.
3= 1st key-11,31,42,53,55 / 2nd-13,33,35 / 3rd key-22,24,44.
4 = 1st key-22,24,44,55 / 2nd key-13,33,35 / 3rd key-42,53.
5 = 1st key-13,33,53,55 / 2nd key-24,44 / 3rd key-35.
If the 4 known cuts equal an odd number:
If the unknown cuts are next to a:
1 = 1st key-12,32,43 / 2nd key-21,23
2 = 1st key-12,32,43 / 2nd key-21,23
3 = 1st key-12,32,43,45 / 2nd key-21,23,34,54
4 = 1st key-12,32,34,54 / 2nd key-23,43,45
5 = 1st key-23,43,45 / 2nd key-34,54
VITAL STATISTICS
Manufacturer: General Motors
Code Series: 00A0-00A9
Key Blanks:
Curtis: B44 thru B51, B64, B67, B78, B79
Ilco: P1098E thru S1098D, P1098WC, S1098WD, P1098WE, S1098WH
Ilco EZ: B44 thru B51, B64, B67, B78, B79
Jet: B44 thru B51, B64-NP, B67-NP, B78-NP, B79-NP
Silca: GM1-OR thru GM8-OR, GM17R, GM16R, GM27R, GM28R
Strattec: Primary: 594201 thru 594215 Secondary: 320405 - 595198
Number of Cuts: 6
M.A.C.S.: 2
Key Gauged: Shoulder
Center of First Cut: .109
Cut to Cut Spacings: .092
Cut Depth Increments: .025

Key Blank:
Ilco **B44 Thru B51, B64, B67, B78, B79**
Silca GM1-OR thru GM8-OR, GM17R, GM16R, GM27R, GM28R
Reed Codes: **01-02-127**
HPC 1200CM #: **25**
M.A.C.S.: **2**

Code Series: Lettered Codes, Ex: 00A0-99A9



Cut to Cut: .092

Depths:
1 = .248
2 = .223
3 = .198
4 = .173
5 = .148

Notes:
Spacings:
1 - .109
2 - .201
3 - .293
4 - .385
5 - .477
6 - .569
Depths:
1 = .248
2 = .23
3 = .198
4 = .173
5 = .148
HPC 1200CM
Code Card: C25
Cutter: CW-1011
Jaw: A
Gauge From:
Shoulder
HPC Punch:
PCH Card: P25
Punch: PCH-1011
Jaw: A
Framon:
Cuts Start at: .109
Spacing: .092
Block #: 3
Depth Increments: .025
Key Clamping Info:
Curtis:
Cam-Set: GM-1
Carriage: GM-2X
A-1 Pack-A-Punch: PAK-G1

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It's a Triumph



by
Dale W. Libby

Every so often I face a safe that makes me think. I enjoy this, because new concepts bring back the excitement of opening safes. If all you did every day was open the same brand of safe, over and over, then the excitement would disappear.

This month I will discuss a new safe I came across, plus a couple of tools made by Walt Martin. I will also show my homemade versions against his professionally made instruments.



1Forth wheel or Driver of the Triumph Safe as seen from the outside with x-ray vision. Note direction of cut-out. Last turn is LEFT to stop.

I was not able to take pictures of the Triumph Safe, but I removed the interesting combination lock mechanism to photograph in my shop. *Photograph 1*, shows the drive cam or driver of this screw change wheel pack. The lock had three wheels and this driver. We are viewing this wheel with our X-ray vision from the outside of the safe.

My first thought was that this was a Yale OB type lock. I put pressure on the handle and it did not affect the wheel turning. Therefore, it was not a direct drive safe. The strange thing was that I could not feel the drive wheel 'bump' when trying to find the contact area. With most OB locks, the drop-in is near "0" on the dial.



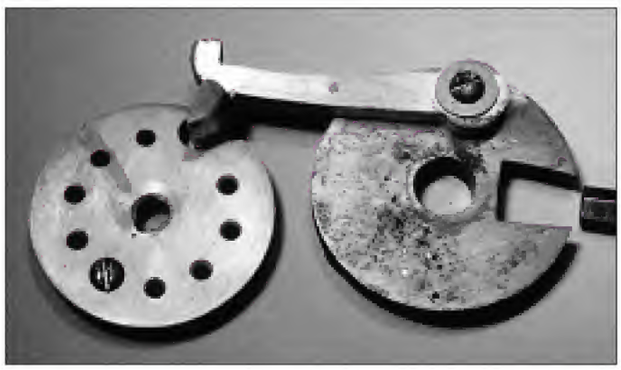
2.Locked configuration of Triumph mechanism. Note stop on top of lever.



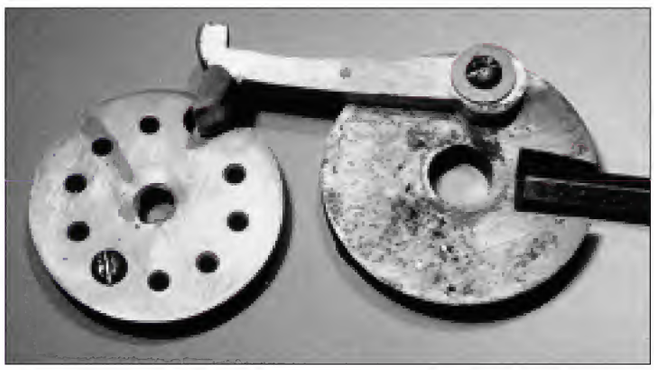
3.When the gates are aligned, lever drops below (unseen) stop into wheel pack.

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4.From the outside, the dial is turned Left which moves the lever which is attached to the handle opening cam.



5.Handle bolt can be then moved into slot allowing the bolts to withdraw and the door to open.

I could not feel any contacts because the drive wheel was a little smaller than the other three wheels of the lock. Manipulation was not a possibility without any readings.

To open this unit, I drilled a hole in this 1917 manufactured safe at 70. There was mild hardplate under the skin of the door. When I viewed the drive cam through my scope, I saw that the angle of the gate in the edge of the wheel was facing the 'wrong' way. This seemed to indicate that the last turn was left to stop, and not the usual right movement of the dial to the stop position.

The only safes that I had worked on with a left to stop position was Mosler "flapper" locks. This was defiantly not a Mosler lock.

Photograph 2, shows the relative position of the wheel, blocking cam and lever. There is a stop above the lever that keeps it from moving which is not shown. The large Allen wrench represents the bolt drive.

After dialing the combination the lever drops into the wheel pack and below the lever stop. From the outside, the dial is turned to the left and this pushes the blocking cam into alignment with the Allen wrench.

Photograph 3, shows the mechanism before the outer 100 number dial is turned.

Photograph 4, demonstrates what happens when the dial stops. It moves the opening wheel with slot into proper alignment with the bolt.

Photograph 5, shows the bolt going into the gate and the safe opens.

With the Hawkeye scope and a small hole (1/4"), I scoped the relative combination. I did drill outside the dial

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ring and straight in. The dial and ring were small, and the wheels were large. The secret of where to transfer seemed logical to me.

From the drilled hole, I could see the open case construction of the wheels and lock case. When I looked up, I could see the lever going across the top of the wheels. The drop-in position had to be between 12:00 o'clock and 1:00 o'clock.

Remember, the last turn was to the left, so for any length of movement of the lever, it had to drop-in on the opposite side of the wheel pack, as opposed to most locks which have a drop-in between 11:00 to 12:00 o'clock.

About 10 minutes after viewing the combination, I dialed it open with a "left to stop" direction.

Walt Martin Tools

Next, let us take a look at some tools that Walt Martin made. His company specializes in unique safe tools and obsolete safes parts. (310) 323-5191.

Photograph 6, shows three tools that I use to work on the LaGard 2200 key operated combination. Walt's tool is in the center and is made to move individual wheels in the lock. This tool could be used as a pick, I suppose, but its real worth is for moving individual wheels in the lock when viewing the edge of the wheels after drilling a hole from the front of the lock. This tool makes it easy to move each wheel.

The second way to use this tool is to move the wheels when viewing through the change key hole for a rear read. When the wheels line up at the change key hole, the lock is open. There is no transferring of wheels after lining up the change key positions of the wheel.

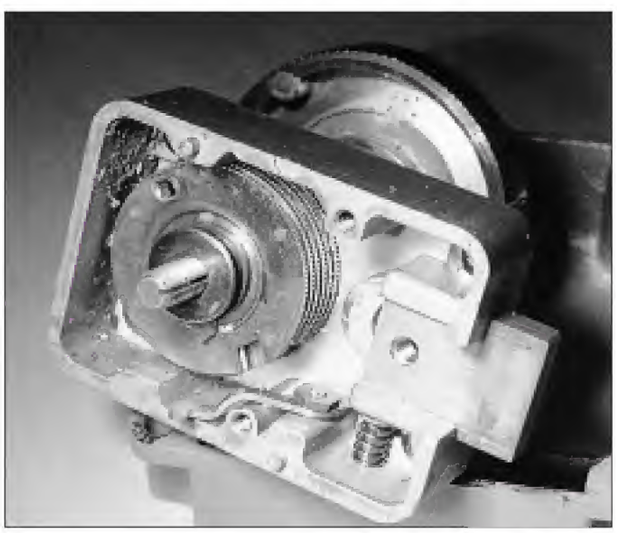
One of the ways to make money with the tool is to use it to reset the wheels in this lock when they have become scrambled. I made my own tool for this, which is at the left in the picture. It is just a LaGard key with most of the blade ground away. I call this key my "Sweeper" key. I just



6.Martin 2200 pick between two of my home made tools.



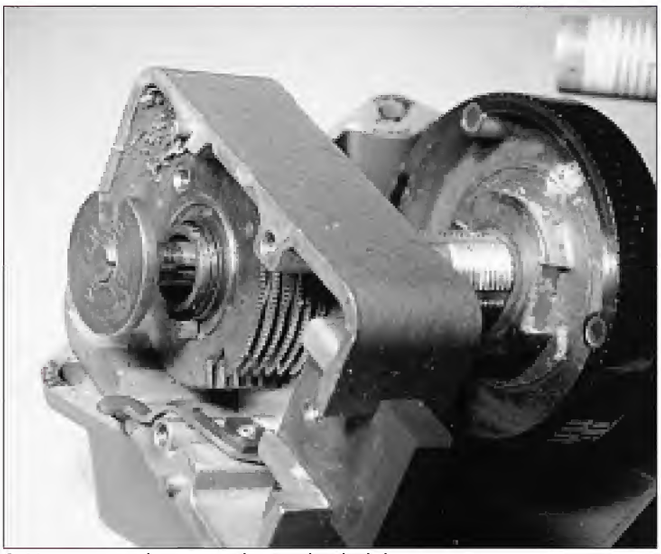
7.Bushing and spindle puller kit with hardened 5/16 X 40 bolt.



8.Non-Threaded Bushing installed to mark length to cut off spindle.

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9.Homemade non-threaded drive cam.

insert it into a 2200 series lock, turn to stop, and all the internal wheels are aligned to allow the correct key to be inserted. This tool cost me noting to make, and has made me a lot of money and saved a lot of time.

The tool to the right is a nut driver with the end half ground away. With some jiggling, each individual wheel can be turned. The real reason I like this tool is that it turns the drive cam easily when the lock has been picked.

Photograph 7, shows the Martin S&G spindle puller and marking bushing. The bushing is most important. The spindle puller is made of spacers and a 5/16" X 40 hardened nut. I am somewhat dubious about the advisability of pulling and repositioning the spindle. Perhaps for day lock options this would work instead of filing a new spline key slot in the end of the spindle.

The bushing is a good tool and makes cutting the spindle to length easy and accurate.

In *Photograph 8*, the bushing has been inserted over the dial spindle. When the dial is inserted properly, it is easy to mark the length that must be cut off. This is easier than threading and un-threading the drive cam for the lock twice when measuring and marking.

This bushing can be ordered in many popular sizes to fit the wheel post properly from Mosler, to Diebold, and other S&G sized locks. When the spindle is marked with this method, its length is perfect. It stops at the top of the drive wheel.

How many of us have cut a dial spindle a little too short? I have. Years ago, I found my method for measuring and cutting spindles. My tool is shown in *Photograph 9*. All it is, is a drive cam that has been drilled to 5/16". I removed the threading to facilitate it fitting the spindle quickly.

All the safemen that I know have an archive full of different sized drive cams. Just take a sampling of S&G, Precision, Mosler, and Diebold drive cams. There is little use for old safe drive cams, so I have been drilling them out for years and using them for spindle spacers.

It is important to use a good fitting cam to the combination lock to get that quick and perfect fit. Improvise, Drill, and Prosper! TNL

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1. Major Manufacturing came out with a simpler design (item #MKP-1) which is essentially a punch.

Major's Keying Punch for Master "UP" Padlocks

by
Sal Dulcamaro,
CML



A number of years ago, Master Lock introduced padlocks (and residential locksets which was recently sold to Schlage) with what are called Universal Pins (UP). The locks contained effectively uncoded lock cylinders, but the cylinders were not lacking pin tumblers. Instead, each pin chamber contained a tumbler spring and a single pin tumbler known as a universal pin. The universal pin looks like an excessively long bottom pin, with a flat top surface and a roughly pointed bottom surface. What makes this pin particularly unique is that it is subdivided in full depth increments somewhere toward the middle of the universal pin. The pin is coded by shearing the originally long pin at one of these designated increments into two separate pins- top and bottom. The pin is set with the assistance of an existing cut key designed for such a Master brand lock. After the shearing process is completed, each single universal pin is matched to a cut depth (in the matching tumbler position.) for the specific key.

The coding process required a special fixture which is essentially a screw driven press. The device applies sufficient pressure to each universal pin so that it will split in two at a designated increment. The fixture, while being effective, is also somewhat expensive. It probably wouldn't be fiscally practical if you were going to order only a dozen Master UP padlocks to code and sell to a customer. Major Manufacturing came out with a simpler design tool at a considerably lower cost. Their tool (item #MKP-1) is essentially a punch. *(See photograph 1.)*

Photograph 2, shows how the punch fits over the head of a cut key. The head of the key is completely contained within the slot of the punch. The front surface of the punch is designed to contact the face of the



2. The punch fits over the head of a cut key.

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cylinder plug, and apply all forward force to that surface.

The M1 key has four cuts, but the UP lock cylinder has five chambers, each with a universal pin. In *photograph 3,* the cut M1 key has been inserted into the keyway. The plug face sticks out of the front of the padlock very slightly. Before the pins are sheared and coded to the key, the universal pins are contained in five pin chambers. Each pin extends from an upper chamber in the shell to a lower chamber in the plug. The first four universal pins will each seat in one of the four cuts of the M1 key. The fifth (and last) pin will rest in a lower chamber in the cylinder plug, just beyond the tip of the key.

The Major MKP-1 keying punch is placed over the key head as in *photograph 4*. The front face of the punch is in direct contact with the face of the plug. When using this tool to set the pins in a UP padlock, it is best to place the padlock in a bench vise. The shackle should be pointed down and placed within the jaws of the vise. The vise should not be tightened. *Photograph 5,* doesn't show the UP padlock in a vise, but imagining it seated in the jaws of a vise, you should lightly tap the punch with a hammer until the plug seats into the shell. *(See photograph 6.)*

What is happening, when the plug is tapped inward, is the material around the pin chambers (at the shear line) is applying direct force on the pins. This is one of the few times when the shear line of the lock cylinder is truly literal. The pins are sheared at the shear line, as the plug is forced into the shell. Each universal pin separates into a top pin and bottom pin.



3. The cut M1 key has been inserted into the keyway.



4. The Major MKP-1 keying punch is placed over the key head.

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5. Lightly tap the punch with a hammer.

At the same time the relative positions of the upper and lower chambers shift. The first chamber of the plug becomes aligned with the second chamber of the shell. The second chamber of the plug aligns with the third chamber of the shell, and so on. This process creates an unusual pin stack.



6. When the pins shear, the plug will seat creating a shear line to that key bitting.

Whereas most lock cylinders will either have one single size top pin or matched sizes (small top pin for large top pin and large top pin for small bottom pin), the UP locks mostly have irregular stacks. I'll give an example. Suppose the cuts on the M1 key were: 6161. Setting the pins with that key would create bottom pins of the same size (6161) bow to tip. Since the created top pins are effectively shifted one position, the top pin in the first upper chamber would be aligned with solid metal in the plug, between the face of the plug and the first lower chamber. That top pin would not function. The top pin in the second upper chamber would now be aligned with the bottom pin in the first lower chamber. Therefore, you would have a rather long #6 bottom pin with the long top pin created by shearing off the #1 bottom pin (which would be in the second position lower chamber).

The pin stacks aligned with the key cuts bow to tip would be as follows. First cut position: long top pin, long bottom pin. Second cut position: short top pin short bottom pin. Third cut position: long top pin, long bottom pin. And fourth cut position: short top pin, short bottom pin.

This relatively common occurrence when coding UP padlocks, would almost seem to cause problems. I would have expected that inserting and removing the key would be difficult, with the tall pin stacks created by combining both long top and bottom pins. I was somewhat surprised that a lock (coded as such) worked quite smoothly, with no measurable difficulty inserting or removing the key.

Master UP padlocks should be available from most locksmith supply companies that sell Master brand padlocks. UP padlocks are available in Master sizes: #3, #1 and #5 (long and standard shackle lengths). This and other locksmith tools made by Major Manufacturing should be available from most locksmith wholesalers. If your supplier doesn't carry them, contact: Major Manufacturing, Inc., 1825 Via Burton, Anaheim, CA 92806. Phone: 714/772-5202. FAX: 714/772-2302.

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Roto Zip Spiral Saw

Roto Zip Tool Corporation announces a new literature piece called the Spiral Saw Uses Sheet. This comprehensive listing advises the reader of seventy three diverse applications for the Roto Zip Spiral Saw and corresponding Zip Bit. The Uses Sheet categories applications by the type of bit used to make the cut, as well as the general category of use, such as carpentry, plumbing, tile installation, hobbies, crafts, etc.

While its primary advantages are cutting speed and control the Spiral Saw slices material rather than the ripping action of jig, reciprocating, and circular saws. Using a variety of patented Zip Bits, this spiral cutting action cleanly slices through virtually any type of commonly used building material up to 1" thick.

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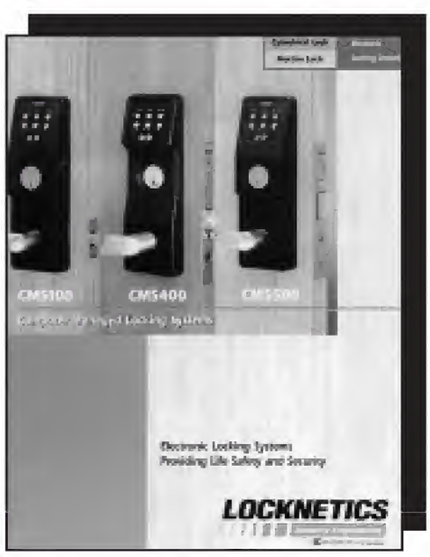
Mayflower Releases Security Source Book

Mayflower Sales, distributor of access control products, architectural hardware and locksmith supplies for over 80 years, has announced the release of its first catalog. With its publication of the 224-page Security Source Book, Mayflower brings together in one volume information which will enable security professionals to thoroughly understand the applications of different access security equipment and to solve problems whenever and wherever they arise. The Security Source Book offers a detailed representation of key product lines from the more than 100 brands of access control and electro-mechanical hardware, parts and related products stocked by Mayflower, including hard-to-find items.

For further information contact Mayflower Sales, 614 Bergen Street, Brooklyn, NY 11238 (800) 221-2052, (718) 622-8785, Fax: (718) 789-8346,http://www.mfsales.com,e-mail: pilgrim@mfsales.com

Locknetics CM Series Brochure

A newly revised twelve-page brochure fully describes the Locknetics CM Series of microprocessor-controlled, cylindrical and mortise-style electromechanical locks. CM5100 cylindrical and CM5400 and CM5500 mortise-style locksets incorporate 30% fewer moving parts than conventional mechanical locks, along with extra-heavy-duty construction for rugged durability.



The TorqDefender vandal-resistant, clutch-controlled outside lever is standard on the entire CM Series. The CM5500 also includes the patented AutoBolt, which automatically extends a 1" deadbolt on closing. The brochure fully explores the various functions available with the CM Series models, which provide office, classroom/storeroom, and dormitory/privacy functions, as well as toggle, lockout, and one-time use capabilities.

For further information, contact: Locknetics Security Engineering 575 Birch Street Forestville, Connecticut 06010 Phone: (860)584-9158 Fax: (860) 584-2136, http://www.locknetics.com

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Kenstan Booklets

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There is a separate booklet on the Kenstan Interchangeable Core Thru-Glass Plunger Lock, the Kenstan Pinline Sliding thru-Glass Plunger Lock and the Kenstan Keymatic Sliding Door Ratchet Lock.



All are available, free of charge by writing to Kenstan at 101 Commercial Street, Plainview, NY 11803 or by calling (516) 576-9090 Fax: (516) 576-0100.

Jo-Van Catalog

It is with a great deal of pleasure Jo-Van Distributors proudly announce the second edition of their product catalog. This catalog has been several years in production and once more is indicative of more than ninety percent of the items stocked in the warehouse.

The catalog is the end result of a cumulative effort by Jo-Van and knowledgeable assistance from a great number of manufacturers. The combined effort is now available to all Jo-Van customers. The catalog has also been upgraded to incorporate the suggestions made by you and the end result will quickly become not only an asset to your company, but a necessary tool for your future sales development.

For a catalog contact: Jo-Van Distributors, 929 Warden Ave., Scarborough, Ontario M1L4C6. Phone: 800-268-5731.

SOSS Catalog Is On CD

The SOSS Invisible Hinge catalog is now available on a CD. The CD offers the entire SOSS catalog with updates, complete cad drawings that can be exported to cad programs, all literature and instructions. The CD also contains a 10 minute video explaining how to install the SOSS hinge easily, using wood templates.

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For more information, contact: Richard Frankel, Universal Industrial

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The Lighter Side

Doin' The Snow-Dance Thing



by Sara Probasco

"I learned something, last winter, that might interest you." Bruce Campbell was smiling, as he approached the National Publishing booth at ALOA '98, in Nashville, Tennessee.

"What's that?" I responded, always eager to hear a locksmith's experiences.

"A Ford Tempo will idle for over nine hours on a quarter tank of gas in below-freezing weather."

"Really?" I paused, waiting for the punch line. Bruce stood before me, smiling. Finally I added, "Gee, that's nice to know." When he still offered no further comment, a small frown creased my forehead and I cocked my head a bit to one side, still returning his friendly smile. "I assume you consider this to be useful information. Have I missed something, here?"

Laughing, Bruce told me how he had acquired this tidbit of wisdom:

Bruce Campbell owns and operates Campbell Lock & Key of Dillon, Colorado. Offering 24-hour mobile service, he received a phone call from one of the nearby ski areas one afternoon. According to the caller, (I'll call him "Joe") and his female companion ("Mary") they were on the slopes in the middle of the afternoon when he suddenly realized he didn't have the keys to his rental car in his pocket. He had no idea when or where he'd lost them. Returning to the ski lift area, they stomped about in the snow, looking for the keys, rode back up to the top and stomped about up there. When Joe and Mary had finally looked everywhere they could think of, short of the parking lot, so they decided to call for help.

"Could you meet me at the car around five o'clock this evening?" Joe asked. "I'm driving a green Plymouth with a car rental company sticker on it." He told Bruce the name of the rental company and approximately where the vehicle was parked, and Bruce agreed to meet him at the appointed time.

Arriving a few minutes early, Bruce cruised up and down the lanes of the parking lot, searching for the car in question. But he wasn't having any luck. The only car he saw with the designated company's sticker was a yellowish Ford, not a green Plymouth. Besides, vapor was billowing from the exhaust pipe, indicating that the motor was running, so it didn't seem likely this was the vehicle. After all, Joe had mentioned parking there sometime before seven o'clock that morning.

Bruce decided to pull in at the end of the row and wait for his customer to arrive.

Right on schedule, a young man and woman hurried down the lane toward Bruce's waiting vehicle. When they reached the idling yellow Ford, they paused, then broke into what resembled an Indian rain dance, stomping a packed path in the new snow as they began to slowly circle the car.

Bewildered, Bruce pulled his service vehicle up behind the Ford and got out.

"Hi! You the locksmith?" Joe called, still stomping the ground and peering down between his feet..

"Yeah," Bruce said. "You the guy who called earlier? Lost your keys in the snow?"

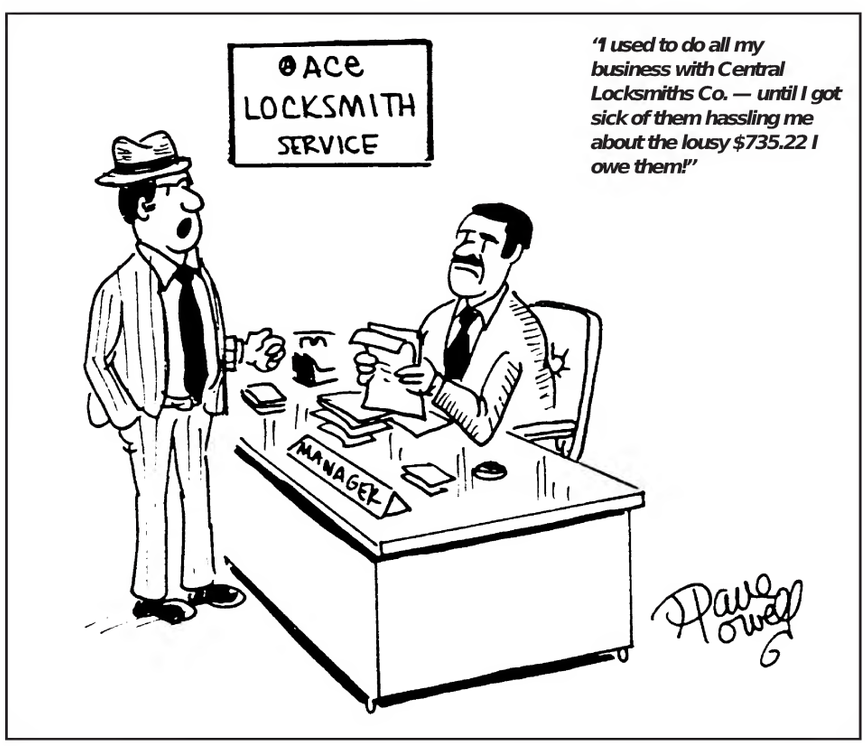
"Yeah."

"This your car?" Bruce pointed to the yellow Ford beside them.

"Yeah."

"I thought you said a green Plymouth."

Joe did a double take at the car, and then grinned. "Yeah. Well, green Plymouth — yellow Ford — I wasn't far wrong. It was dark when we rented it. I guess I didn't pay too much attention." He rejoined Mary, doing the strange dance.



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Bruce watched them a minute, then his curiosity got the better of him. "Do you mind if I ask what you're doing?" he said.

"Looking for my keys."

"You're kidding, right?"

"No. He thought he might have dropped them here, beside the car, after we got out," Mary explained.

Bruce shook his head, scarcely able to believe his eyes and ears. "You didn't lose the keys," he said.

"What do you mean" I put them in my pocket when I got out, and they weren't there, out on the slopes," Joe replied a bit impatiently.

"Listen," Bruce said.

They stopped moving and speaking. Only the sound of the Ford's idling engine broke the silence.

Wide-eyed, Joe whispered, "What are we listening for?"

Bruce shook his head in disbelief. "Your keys are inside the car," he whispered back to Joe.

"What? You can hear 'em?" Joe asked softly, his eyes wide in true amazement..

"No, but I can hear the engine running, and that can mean only one thing," Bruce whispered.

"What does it mean?" Mary asked, also whispering.

Bruce rolled his eyes in exasperation. "Since the motor is running, your keys have to be in the ignition. Obviously, you left them there this morning."

"They really felt foolish," Bruce told me, laughing at the memory.

Before he left, Bruce handed me his business card. On the back side of it were listed "Top 5 ways to know you need a LOCKSMITH." Number two on the list of humorous suggestions said, "If you lost your keys while skiing, and the spare set is in Toledo..."

Sounded like a good opportunity for "Joe" and "Mary" to take a little chuckle at themselves. But somehow I doubt they got the point.

P.S. Many thanks to Bruce Campbell and all the others who stopped by the National booth at ALOA '98 to say "hello," share a few laughs, and exchange some interesting and humorous experiences. TNL

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WELCOME TO THE SHOW

Welcome to the 23rd Annual Convention and Exposition of the Door and Hardware Institute. This special issue of *The National Locksmith* is the eleventh annual issue designed to bring locksmiths important, specific information in the world architectural and builders hardware.

As the American public pursues technology further, the need for advanced security will increase. That's why this year's theme is "Catch the Magic – It's Electric!" The ever increasing need for security has prompted industry leaders to call for support on the electronic front!

The convention will take place October 31 through November 2 in Orlando, Florida, at the Orange County Convention Center.

Come to Orlando, and experience the land of magic! While in Orlando, enjoy some of the great features of the DHI convention, including a Halloween night Opening Reception, networking luncheons, a sell-out golf tournament, a full-day of education sessions and DHI hosted tours to hot sites in the surrounding area, just to name a few!

This issue contains booth listings of the convention. Also included on the following pages is our Product Showcase section, presenting a wide range of products being exhibited at the show.

For more information on the products in this issue, you can circle the product's number on the Rapid Reply card, or send in your request via e-mail to *The National Locksmith* at natllock@aol.com or fax to 630/837-1210.

If you have any questions regarding the show, including points of interest at the show or other events to take part in while you're in Orlando, you can contact DHI at 703/222-2010; Fax: 703/222-2410; e-mail: www.publications@dhi.org. They can answer any questions you may still have and point you toward the magic!

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Booth Listings



Booth #	Company
53	3M Fire Protection Products
541	A & J Washroom Accessories
645	A & L Shielding Inc.
510	A Crane Plumbing Company
345	ABH Manufacturing
716	Accurate Lock and Hardware Company
123	Ace Lock and Security Supply
749	Adams Rite Manufacturing Co.
540.2	Air Louvers Inc.
649	AJ Manufacturing Co Inc.
300	Alarm Lock Systems Inc.
611	Algoma Hardwoods Inc.
59	Ambico LTD
701	American Specialties Inc.
710	Ampco Products Inc.
839	Amweld Building Products Inc.
610	Anemostat Products
323	Architectural Control Systems Inc.
225.1	Arrow Lock Manufacturing Co./ ASSA Inc.
228	Asterix Security Hardware International Inc.
511	Auth Florence Manufacturing Co. Subsidiary of Florence Corp.
810	B.E.A. Inc.
543	Baillargeon Doors Inc.
904	Baron Metal Industries Inc.
1017	BASF
7	Benchmark Door Systems
217	Best Access Systems
606	Bobrick Washroom Equipment Inc.
633	Bommer Industries Inc.
705	Boyle and Chase Inc.
405	Bradley Corp.
230	Brocar Products Inc.
929	Buell Door Corp.
1021	Building Operating Management Maintenance Solution
65	Bums Manufacturing Inc.
101	Cal Royal Products Inc
1049	Cambridge Door LTD
211	Ceco Door Products A United Dominion Co.
604	CFM
549	Chase Industries Inc.
62	China Jing An Import and Export Co. Bhejiang Branch
504	Comsense Inc.
817.2	Corbin Russwin Subsidiary of Yale Security Group

Booth #	Company
107	Corrim Company
900	Cutler Manufacturing Corp.
806	Daybar Industries LTD.
845	Dayton Industries Inc.
722	Deanstell Mfg. Company
911	Detex Corp.
135	Direct Security Supply
720	Don Jo Manufacturing Inc.
739	Door and Hardware Institute
727	Door Controls International
333	DORMA Door Controls Inc. The Dorma Group
422	Dunbarton Corp Rediframe Slimfold Products Division
132	DynaLock Corp
801	Edgcomb Metals
409	Eggers Industries.
75	Entrance Technology
225	ESSEX Industries Inc.
202.1	Firedoor Corporation of Florida
706	Florida Made Door Company
607	Flush Metal Partition Corp.
817.3	Folger Adam Security Inc.
1001	Freedom Door Company
651	Galaxy Hardware Inc.
1007	Global Door Controls Inc.
417.4	Glynn Johnson Corp.
301	H B Ives
232	Hadrian Manufacturing Inc.
849	Hafele
241	Hager Companies
702	Hanchett Entry Systems
105	Harney Manufacturing Co Inc.
104	Hettich America LP
139	HEWI Inc.
540	Hiawatha Inc Subsidiary of Activar
726	HPC Inc.

Booth #	Company
426	Ideal Architectural Doors and Plywood
119	Inellikey Corp.
433	Ingersoll Rand Group: Schlage/LCN/ Von Duprin/ Glynn Johsnon/Steelcraft
417	Ingersoll Rand Group: Schlage/LCN/Von Duprin/ Glynn Johnson Steel Craft
700	Intertek Testing Services
540.1	J L Industries Subsidiary of Activar
448	Jacknob Corp.
116	JLM Wholesale Inc.
744	Karpen Steel Custom Doors and Frames
1009	Keri Systems Inc.
708	Killeen Security Products
67	L David Industries
444	L E Johnson Products Inc.
1038	Larsen's Manufacturing Company
417.5	LCN Division Ingersoll Rand Arch Hardware
1030	Leathemack Hardware Inc.
623	Leslie Locke Inc.
812	Locksmith Publishing Co.
544	Lockwood
707	Lori Lock
512	Lund Equipment Co Inc.
222	M A G Eng. & Mfg. Co Inc.
640	Marker Products Inc.
304	MARKS USA
220	Marlite
347	Marray Enterprises Inc.
945	Mas Hamiliton Group Inc.
1028	Meek Manufacturing Co. Inc.
447	Mesker Door Co Inc
55	Millennium Door Division of American Building
609	MMF Industries Major Metalfab Co.
349	Mohawk Flush Doors Inc.
49	Monaco Lock Company
639	Mont Hard(Canada)Inc.
111	National Custom Hollow Metal
733	National Guard Products Inc.
202	Next Door Company
725	Norfield Industries
901	North American Door Corp.
817.4	Norton Door Controls Member of Yale Security Group
417.7	NT Dor-O-Matic
417.6	NT Monarch Door Controls

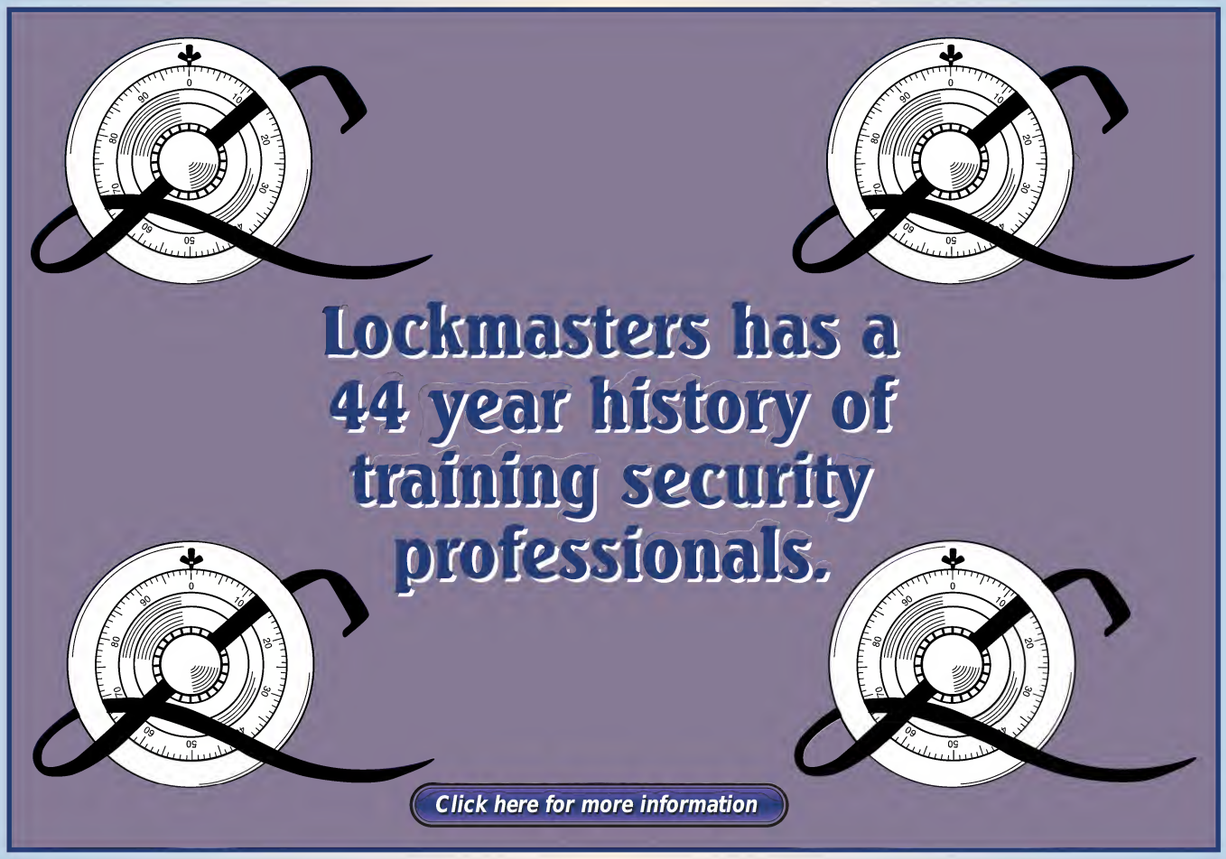
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Continued from page 64, DHI-4

Booth #	Company
605	Ohio Valley Door Corp.
327	Omina Industries Inc.
500	Oshkosh Architectural Door Company
1013	Overly Manufacturing Company
142	Partition Systems Inc.
443	PBB Inc.
601	PDQ Manufacturing
317	PEMKO Manufacturing Co.
711	Pioneer Industries Inc.
647	Plyco Corporation
118	PortalPAC Systems Corp
205	Precision Hardware Inc.
140	Premier Products Inc.
446	Quick Draw Southwest Subs. of RDL Supply Inc.
1029	R K S Tool & Die Inc.
401	R R Brink Locking Systems Inc.
201	Reese Enterprises Inc.
501	Republic Builders Products
817.1	Rixson Member of the Yale Security Group
216	Rockwood Manufacturing Company
805	ROFU International Corp.
117	Rutherford Controls Inc.
944	S Parker Hardware Manufacturing Corp
923	S W Fleming LTD
800	SAFTI Division of O'Keefee's Inc.
509	Sanymetal
621	Sargent & Greenleaf Inc.
417.1	Schlage Lock Company Division of Ingersoll Rand Co.
122	Securitron Magnalock Corp
826	Securitech Group Inc.
100	Security Door Controls
110	Security Lock Distributors.
507	Select Products LTD
811	Simplex Access Controls Division of ILCO Unican
718	SOSS Invisible Hinge Division of Unversal Ind. Product
510	Southern Steel Company
500.1	Southwood Door Company
717.1	Stanley Access Technology Division of The Stanley Works
717	Stanley Hardware Division of the Stanley Works
417.2	Steelcraft Company Division of Ingersoll Rand
724	Tanner Bolt and Nut Corp.
508	Taylor Building Products
1005	Taymor Industries.
203	Tempo Import and Export (USA)Inc
709	The Combination Door Company
600	The Kewanee Corp.
933	The Maiman Company
506	The National Locksmith
1023	Therma Tru HMF Division
548	Timely Industries Inc.
824	Trans Atlantic Company
617	TRIMCO/BEW
1043	Trimec
1025	Trine Products Company
403	Trussbilt
907	U S Vertex
441	Ultra Industries Subsidiary of Macklanburg Duncan
1037	UltraGlas Inc.
200	Underwriters Laboratories
1003	Van Duerr Industries
417.3	Von Duprin Division of Ingersoll Rand Company
206	Western Oregon Door Inc.
917	Weyerhaeuser
802	Winfield Architectural Lock Division Subsidiary of Masco
939	Woodfold Marco Manufacturing Inc.
1006	Woodtech Trading Co. Inc.
817.5	Yale Corbin Canada LTD
817	Yale Member of the Yale Security Group
627	Zero International Inc. TNL



PRODUCT SHOWCASE

DHI- October 1998

ABLOY Power Transfers

The ABLOY Power Transfer is designed to ensure the unbroken transfer of cable between door and frame. The maximum diameter of the wire bundle transferable through the power transfer is 0.295" (7.5mm). Power transfers 8810 (>120 Deg.) and 8811 (<120 Deg.) are made of steel and available in bright chrome finish.



DOOR SPY DS-6 4-Way Viewer

Underwriters Laboratories Inc., have revised the fire rating of DOOR SPY DS-6 security door viewers form one hour to one and a half hours. This is important news for all distributors serving the institutional and building sectors where the higher rating is increasingly being written into specifications. And specifiers for residential, lodging and commercial projects now can select a viewer that not only provides clear four-way viewing, but also the highest fire rating available today.

the 90-minute fire rating applies to all DOOR SPY products, including standard gray and white colors as well as brass and chrome metalized finishes. DOOR SPY is the only four-way fire-door viewer available in the market place, and renders common peepholes virtually obsolete. It allows residents to see clearly — forward,



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right, left and below — by simply rotating the eyepiece. It provides 180 degree visibility, 90% distortion free, up and down the corridor without opening the door.

DynaLock 2011 Electromagnetic Lock



DynaLock Corp. introduces the re-designed Model 2011 electromagnetic lock now featuring four (4) standard field selectable voltages, 12-24 VAC/DC, 1200 lb holding force, modular electronics, adjustable mounting, UL listed, with new LC (Low Current) option requiring only .16 @ 12 Volt. American quality, delivery and priced competitively with the imports.

HES 7500 Series

The HES 7500 Series electric strikes have filled a market need like no other electric strike. If the application calls for a cylindrical lock and a fire door with a smoke seal, there is absolutely no other choice on the market today. The 7500 Series is UL Fire Door Accessory listed and able to release under a significant amount of door loading, as is the case when a smoke seal is present. If any other strike is used in this application, the installer will need to make an adjustment to allow for the pre-load. Once again, HES has designed the most installer friendly electric strike in its class with an internally mounted solenoid and field reversible fail-safe/fail secure function.



Locknetics CM Series

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now available with an integral, full-swipe card reader. The card reader locks are fully compatible with ABA Track 2 standards and are the latest in the Locknetics family of products managed by their powerful LockLink Windows-based software. CM Series electromechanical / card reader locks offer multiple, programmable access methods for educational, healthcare, corporate offices, and commercial facilities.

On-board microprocessor control allows users to be added, changed or deleted in seconds directly at the lock, or with a laptop or palmtop PC. The new locks are fully programmable for up to 500 cards, user codes or TouchEntry keys, with an optional 500-event audit trail. Other available features include Linked Access, which requires two forms of access control for higher security applications, and the ability to program Time Expiration.

Marks USA Survivor Series



Marks USA introduces two new key in lever Survivor Series, Grade 1 & 2 locksets featuring the "CLUTCH" which are available for both conventional and IC cores. When locked, the "CLUTCH" disengages the outside lever allowing it to turn freely. These locksets survive where rigid levers fail. Each Survivor Series rose contains its own proprietary high-strength lever support spring which eliminates lever droop. Marks USA locksets feature a lifetime mechanical warranty. All standard functions are available in both the "American" with the angular return and the "Crescent" with a smooth rounded lever.

Radio Key 600 Stand-Alone Proximity

Secura key announces the addition of keypad entry to the Radio Key 600 proximity access control system. Radio Key 600 allows any of up to 600 users to be assigned either a Proximity Key Tag or a PIN code to gain entry. The PIN entry feature not only adds flexibility to this exciting

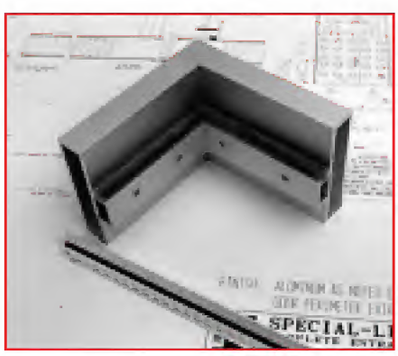


single-door access control product, but makes it highly price competitive for many keypad entry applications. The Radio Key 600 is highly weather-resistant, and is designed for indoor of outdoor use.

With the addition of the RKAT Audit Trail Module, the Radio Key 600 can drive a serial printer or communicate with a PC using RK-LINK software, a Windows 95/NT program, which allows the user to print reports, program, back-up and control the Radio Key 600.

Special-Lite, Inc. Full Aluminum Frame

Special-Lite, Inc. introduces the SL-145, a 1"x 4.5" full tube aluminum frame. This frame is being used in renovation where a new frame is needed but the rough opening is too small to use conventional 1.75" x 4.5" aluminum tube frame. In many situations, the extra 1.5" gained by using the SL-145 allows the renovated entrance to meet handicap code without major structural



modifications to the building. The SL-145, like all Special-Lite tube frames, has .125" thick walls and applied door stops. It is engineered to last in hard duty applications.

Von Duprin KS920 New Keyswitch



Von Duprin has introduced a new keyswitch that is designed for use in a delayed egress system, as well as many other applications needing keyswitch control with audible and visual feedback.

The new KS920 Keyswitch contains a piezo horn rated at 100 dbA minimum at 2 feet, a red LED, and both momentary and alternate action switches, which are actuated by a mortise cylinder.

The unit mounts in a standard 2-gang backbox, with a 1-3/4" depth. The cylinder and backbox are not included.

The KS921 may be used with the Von Duprin PS873 Power Supply equipped with

873-DE Delayed Egress Logic Board to provide delayed egress operation for electromagnetic lock applications.

Yale Grade 2 Lockset



Yale announces the introduction of its new Grade 2 Key-in-Knob Lockset, the 4300 series, and its new Grade 2 Light/Medium Duty Key-in-Lever Lockset, the 4300LN series. Both the 4300 series and the 4300LN series are designed as economical choices for light commercial and heavy duty residential applications including interior offices, multi-family housing, hotels. restaurants, and office complexes. The new Grade 2 locksets are available in two finishes: satin chrome and bright brass, each with a classic knob and lever design. TNL

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1

The AccessOne lockset from Titan is one of the newest entries into the residential electronic lock market.

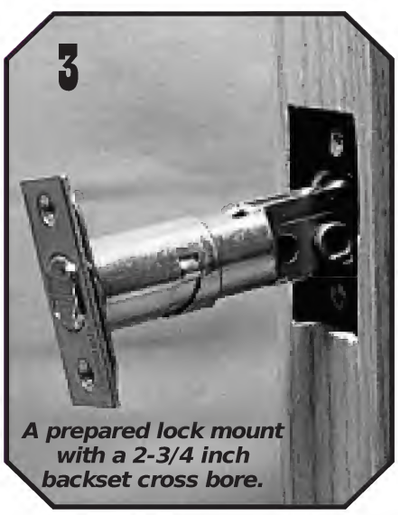

2

All the parts and two remote controls for a Titan AccessOne lockset are shown.

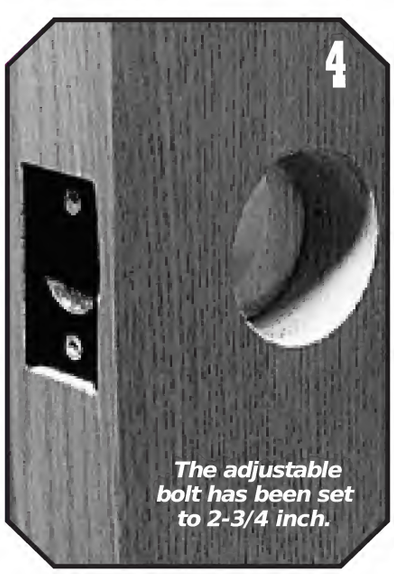
by Sal Dulcamaro, CML

AccessOne

From Kwikset/Titan


3

A prepared lock mount with a 2-3/4 inch backset cross bore.


4

The adjustable bolt has been set to 2-3/4 inch.


5

The inside of the exterior deadbolt assembly.

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The AccessOne lockset from Titan is one of the newest entries into the residential electronic lock market. *(See photograph 1.)* Although it can still be operated manually by a key outside or thumb piece inside, it can be locked and unlocked by remote control. The radio frequency (rf) remote works very much like the one you may have for your automobile. For greater security, it incorporates Rolling Code Technology to prevent code grabbers from gaining electronic access.

Installing the AccessOne

All the parts and two remote controls for a Titan AccessOne lockset are shown. *(See photograph 2.)* An electro-mechanical deadbolt, the AccessOne shares most parts common to strictly mechanical Titan deadbolts. It is designed to install in a standard door prep without additional drilled holes in the door. It uses the same adjustable bolt as a standard Titan deadbolt, and can be installed in doors with either 2-3/8 or 3-3/4 inch backsets.

If the mounting holes are not already made, you will need to drill a 2-1/8 inch diameter cross bore hole (at 2-3/8 or 2-3/4 inch backset), and an interconnected 1 inch diameter edge bore hole. *Photograph 3,* shows a prepared lock mount with a 2-3/4 inch backset cross bore. The adjustable bolt has been set to 2-3/4 inch in *photograph 4,* and is partially inserted into the edge bore hole.

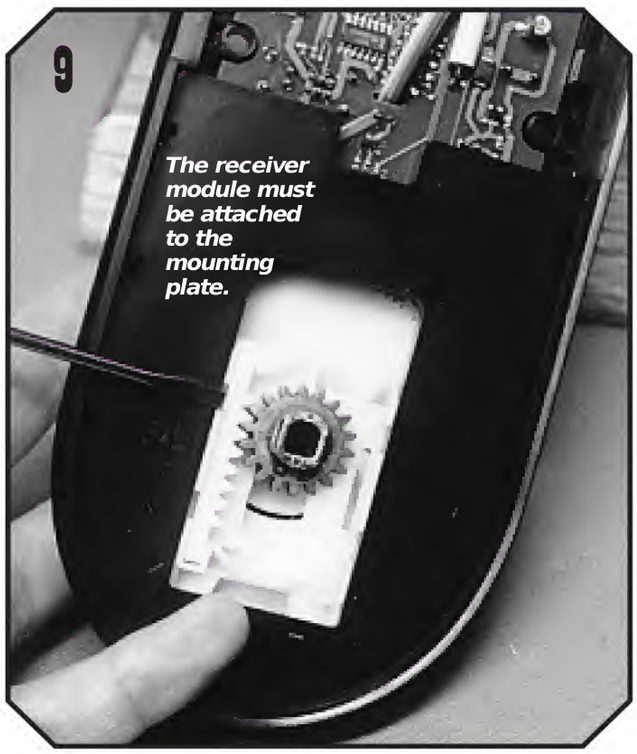
The inside of the exterior deadbolt assembly is shown in *photograph 5.* The normal layout of a mechanical Titan deadbolt is augmented by a wire ribbon with a plastic covered connector at the end. The AccessOne won't fit into a cross bore hole smaller than 2-1/8 inch diameter, unlike other Titan deadbolts. When inserting the exterior deadbolt assembly into the cross bore hole the wire should be inserted under the deadbolt latch to the interior side of the door. *(See photograph 6.)*

The mounting plate attaches on the inside of the door. *(See photograph 7.)* It is positioned so that the wire is routed up through the bridge in the plate and the recess of the mounting plate is aligned with the center of the 2-1/8 inch diameter cross bore hole. *(See photograph 8.)*

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The plate is attached with two 1/4 inch black screws (with washers).

The receiver module must be attached to the mounting plate. *(See photograph 9.)* Before attaching the receiver module, the handing of the door must be determined and the module must be configured to match the handing. The locks are factory set to right hand, and need only be changed for left hand doors. With the thumb piece (on the opposite side of the receiver module) in a vertical position, the plastic insert rack should be carefully pried out and repositioned on the opposite side. *(See photograph 10.)* The round end of the insert rack should point upward. The bolt will not fully extend or retract if the insert rack is not installed properly.

If it was not already removed, the battery cover of the receiver module should be removed. The cover is pushed in and slid upward until it slides completely off the top portion of the receiver module. With the thumb piece vertical, connect the interior wire connector to the exterior wire connector, as in *photograph 11.*

Next, position the receiver module over the mounting plate, so that the opening of the thumb piece fits over the tail piece of the lock cylinder. Then secure the receiver module with three screws. *(See photograph 12.)* Do not over tighten the screws.

To make sure that the Titan AccessOne lockset is functioning properly, you should verify smooth operation of the deadbolt by manually testing the thumb piece or using the key. The bolt should operate freely and should not require excess force to move it. Finally, install four alkaline AA batteries in the receiver module. After the batteries are installed, the unit will beep to indicate that it is powered up.

Programming the Transmitters

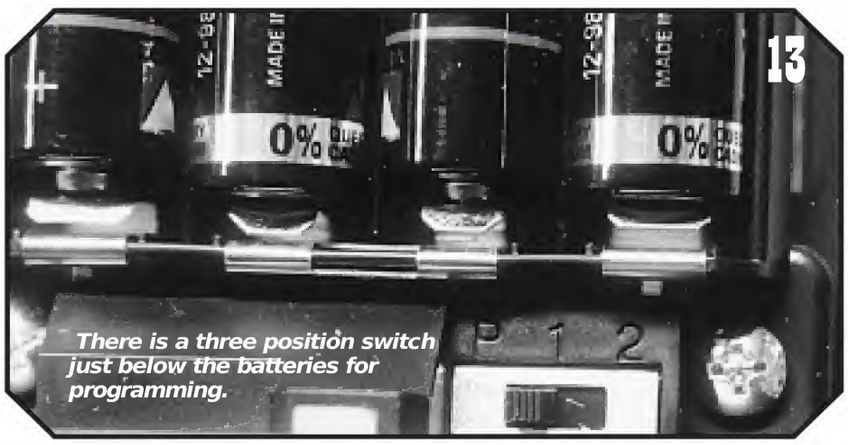
There is a three position switch just below the batteries for programming and the different operating modes. *(See photograph 13.)* "P" is the program mode, and the two operating modes are identified as "1" and "2". With the switch all the way to the left (at "P"), the transmitters can be programmed.

Photograph 14, shows one of the two remotes included with the AccessOne. There are four buttons on the transmitter. The button at the

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There is a three position switch just below the batteries for programming.

top (with a picture of an unlocked padlock) is the unlock button. The one just below it (with a picture of a locked padlock) is the lock button. The two buttons at the bottom of the transmitter are intended for remote operation of a garage door or lighting. The instruction booklet does not indicate how those buttons are programmed.

No more than twelve transmitters can be programmed to operate any one lockset. Trying to program a thirteenth remote will generate an error message (sound). All remotes must be programmed in the same programming session. If you decide to program additional transmitters at a later time, all previous remotes will be erased from the system.

Programming Procedure for AccessOne Transmitters

1. Slide the mode switch to "P". You will hear two audible beeps and the exterior deadbolt light will illuminate red to confirm that you have entered the program mode.

2. Point the (remote control)

Continued on page 78, DHI-18



One of the two remotes included with the AccessOne.

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Continued from page 76, DHI-16

transmitter toward the receiver module and push the "Lock" and "Unlock" buttons simultaneously. You will (shortly) hear three audio beeps and the exterior deadbolt light will illuminate green.

3. Push the "Lock" button. You will hear two audio beeps confirming that the receiver now recognizes the transmitter and has stored it in memory. The exterior deadbolt light will illuminate red, signaling that additional transmitters may be programmed at this time.

Additional transmitters (no more than twelve remotes including the original one programmed) may be programmed by repeating steps 2 and 3 with each additional transmitter. Once all the transmitters have been programmed, the switch should be set to operational mode 1 or 2. The operational modes work as follows:

Automatic Re-Lock Mode — In this mode the bolt will re-lock 30 seconds after being unlocked with a remote control. If unlocked manually (by thumb piece inside, or by key outside), the bolt will not re-lock. Customers should be alerted about possible



The exterior deadbolt light will flash red or green to correspond with audible beeps.

15

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After the programming is completed, the battery cover should be slid back in place.

16

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consequences of using this mode. If the door is closed and the transmitter is left inside the house, the door could lock automatically and cause a lockout. If the door is left open for more than 30 seconds, the bolt will extend. If the bolt is not retracted before attempting to close the door, the extended bolt could be damaged by hitting the door frame.

Normal Operation Mode — In this mode, the bolt will remain unlocked after being opened by the remote control. It will not re-lock automatically. To re-lock, you will either have to push the "Lock" button on the remote, or lock it manually (by key or thumb piece).

The exterior deadbolt light, at the top of the exterior deadbolt assembly will flash red or green to correspond with audible beeps which indicate a variety of circumstances or conditions. *(See photograph 15.)*

When locking by remote control, three audible beeps and a flashing red light will indicate that the bolt has extended. When pushing the unlock button, one long audible beep and a flashing green light will indicate that the bolt is retracted. If the lock is either already locked or unlocked, pushing a button matching the current condition will generate the same audio visual response as if the bolt was being moved to that condition. The bolt will not be moved, but the audio visual signals will confirm the lock is in the condition that you requested.

If the bolt is somehow restrained and cannot move, the AccessOne will not burn out any electrical components or just run down the batteries. If the lock is unable to overcome the binding pressure (i.e. if the bolt is stuck either extended or retracted), it will stop trying to move the bolt and generate an error signal. The error signal consists of repeating audio beeps and alternating red and green flashing lights on the exterior deadbolt housing. The lock will then have to be operated manually to clear any obstruction to the bolt's movement.

There is also a small light on the (interior) receiver module. The light is called the LockMinder. When the bolt is in a locked (extended) position, the LockMinder light will be illuminated. That same light also acts as a low battery warning. When the batteries are low, the LockMinder will flash whenever a transmitter activates the unit to indicate a low battery condition.

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Don't panic!

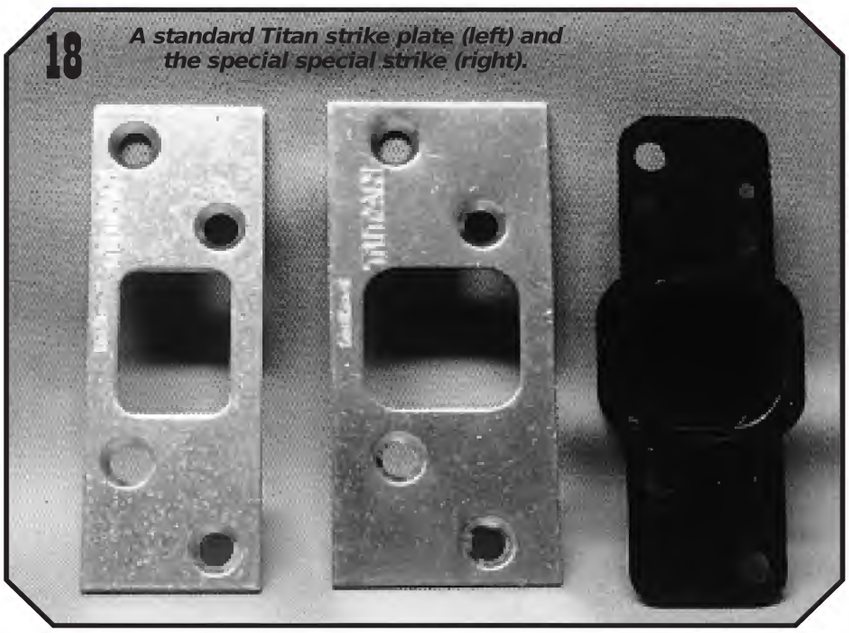
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It will repeat the same flashing until the batteries are dead or replaced with new ones.

After the programming is completed, the battery cover should be slid back in place (on the receiver module) until it catches. *(See photograph 16.)* The installation, on the door is completed. *(See photograph 17.)* It is ready for remote or manual operation.

The Special Strike Plate

I mentioned earlier that there are protections for the electrical components in case of binding or other obstruction to movement of the deadbolt. To minimize the likelihood of any interference with the free movement of the bolt, the AccessOne comes packaged with a special oversized strike plate and plastic strike box. *Photograph 18,* shows a standard Titan strike plate at the far left. In the middle is the special strike plate, and the matching strike box is to the right. The extra large opening in the strike plate demands an oversized hole in the door frame.

The hole size (in the door frame) for the standard Titan strike is one inch diameter. The instruction sheet indicates that the special strike needs a 1-3/8 inch diameter hole. That may preclude the AccessOne from being installed in a 1-3/8 inch thick door (and matching frame).

A new installation will require a 1-3/8 inch drill bit (hole saw, spade bit, etc.) instead of the more typical one inch bit. A retrofit might be a problem when trying to enlarge the existing one inch hole to 1-3/8 inch. To overcome that difficulty, the lock comes packaged with a special plastic drill guide. *Photograph 19,* shows the drill guide over the tip end of a 1-1/4 inch spade bit.

If you are going to install this strike, you will need to acquire a 1-3/8 inch spade bit. The plastic strike box will not fit otherwise.

To enlarge a one inch hole, you would place your 1-3/8 inch bit into your drill chuck and then place the plastic drill guide over the drill's tip end. The guide would be inserted into the existing one inch strike hole. Once you started drilling, the guide would keep the bit from wandering until it engaged the wood of the door frame. Depending on how deep the original one inch diameter hole is, the drill guide might hit the bottom of the hole and prevent the 1-3/8 inch bit from drilling deep enough. Once you've drilled as far as possible (with the guide attached), you may have to pull the bit back out and remove the guide in order to drill the rest of the way. Hopefully, the partially drilled hole will keep the spade bit going straight and under control. Otherwise you may have to consider a 1-3/8 inch auger bit or hole saw to complete the hole.

For more information on the Kwikset AccessOne lockset call: (714) 474-8800, Fax: (714) 474-8862 or contact a distributor near you. TNL



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Low-Energy Door Operators and the ADA

by Don Kirby

It takes more than just adding wheelchair ramps and wider doors to make a building accessible for those with disabilities or restricted mobility. Meeting these needs may involve other complications. As an example, manual door closers selected, installed and adjusted based on the Americans with Disabilities Act (ADA) requirements, may not provide sufficient power to reliably close and latch a door. Lower the spring power, and latching may fail to occur, compromising security.

Automatic door operators may be required to provide both automatic opening and reliable closing. A power-operated door that opens and closes too fast does not allow enough time for someone with limited mobility to get through safely. Reduce the opening speed, though, and people without disabilities may complain about a slowly opening door. It's a tough choice, and one that demands careful consideration of each specific application.

What the Standards Say

The ADA, although a civil rights law, is based largely on ANSI Standard 117. 1-1992. It states that "at least one accessible route shall connect accessible building or facility entrances with all accessible spaces and elements within the building or facility." Power operated doors meeting low energy standards form an important part of this route.

Although low energy door operators were developed to meet these needs, they are significantly different from conventional operators, and separate standards apply. ANSI/BHMA Standard A156.10 covers "power operated pedestrian doors," which are the conventional "high energy" type, while A156.19 covers "power assist and low energy power operated doors."

Door speed is the biggest noticeable difference between the two types. A low energy unit can only open to back check position (70 degrees plus or minus 10 degrees) in three seconds or more, while a standard power operator will take about half as long for the same function. While this allows more time for those who need it, the general public may feel there is something wrong with the operation and may even walk into the door if it moves more slowly than they expect.

Other requirements a door operator must fulfill to meet the low energy standards include an opening time to the fully open (90 degree) position for four seconds or more and a closing time from 90 degrees to 10 degrees that cannot be faster than three seconds. The door must remain fully open for at least five seconds, unless a sensing device is used to hold the door open. Less than 15 pounds of force applied one inch from the latch edge of the door should stop its motion. Because this force is considerably less than what is needed for higher speed doors, safety sensors are not required on low energy doors, although they may be installed if desired.

For multiple-leaf entrances, some openings may be equipped with a low-energy operator and designated for handicapped accessibility, while others are equipped with conventional operators or manual closers.

Operating forces are another consideration that may lead to the use of powered operators. For example, a typical hardware practice calls for a Size 3 closer on a three-foot wide interior door leading from a main building into a parking garage. This size closer has a closing force of five pounds, and since the industry standard calls for a minimum 60 percent efficiency, the opening force would be approximately 8.3 pounds.

For ADA applications, a maximum opening force of five pounds is allowed, which equates to a maximum of three pounds of closing force. This may be insufficient to overcome the hinge friction, door weight, exit device or lockset resistance, and weather-stripping or gasketing pressure, resulting in an improperly latched door and a possible security breach. The answer to providing full compliance with ADA without sacrificing perimeter security, in these cases, is to automate the door.

Choosing the Right Type

Once it is determined that a low energy operator is needed, there are two main approaches to providing a low energy power-operated door mechanism. One, uses a standard door closer in which secondary pneumatic or electric power has been added by the manufacturer. This style was first pioneered by LCN in 1978. The power assist is used to drive the door open in line with standards. When the electronic controls "time out," the secondary force is removed, and the standard door closer functions take over to close the door. If the building loses power for any reason, the closer functions as a standard closer to maintain perimeter security and door control and still can be operated manually with a reasonable force.

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Pneumatically powered closers, while still electrically controlled, provide certain advantages in some situations. They require only a flexible tubing connection between the control box and door frame. While they need a compressed air source, a compressor with a storage tank can be used to operate multiple door openings.

For areas that require quiet operation, such as libraries, professional offices or medical facilities, the pneumatic control box can be located 50 to 100 feet from the opening to minimize noise. The door mounted components make no more noise than a standard door closer. Also, for exterior doors exposed to heavy winds, a pneumatic operator will continue to maintain pressure as long as wind pressure continues, rather than cycling and timing out.

As an alternative, manufacturers reprogram or otherwise downsize their standard automatic door operators to perform according to the low energy standards. Some units incorporate a clutch to reduce breakaway force if the power fails, but the door may be difficult to operate manually. In either type, if electric power is removed, the operator may not meet the low energy standards for handicapped access, but there is no way to achieve all conditions without power. If the power is interrupted, the powered closer design typically will require less force to operate manually than the automatic operator.



Another factor in choosing a low energy operator is its maintenance requirements and mean time between failures. Because of their higher speed, force, and high-cycling operation, the high speed door operators covered by A156.10 typically are serviced on a regular basis, often under contract. Although the speed, forces, and cycle times are reduced for low energy versions of these operators, their basic mechanisms are essentially the same, and periodic service may be required to keep them operating properly.

Once standard door closers are installed and adjusted, they seldom require service. Similarly, the powered door closer designs adapted for low energy power operation generally do not require much attention once in place, other than periodic visual inspection. The closing cycle is non-powered, and can be operated manually by those without disabilities, which helps extend the life of the power components.

The important thing is to understand which type is being

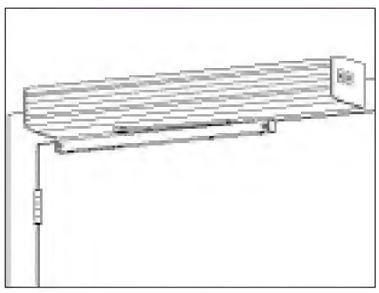


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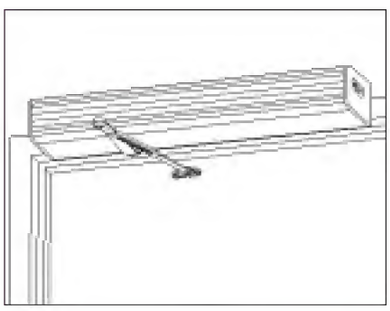
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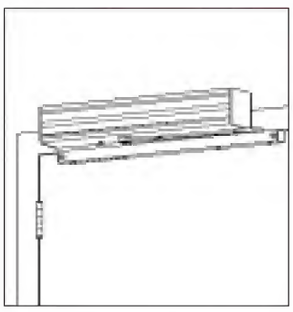


specified, along with its advantages or limitations for the given application. Part of the problem is that power operators are often mis-specified or mis-applied. When a full automatic door operator installation can cost more than $5,000 to $6,000 per opening, it can be tempting to use a low energy operator at a third of the cost or less. Once it is installed, however, there is usually the inevitable call, "Can you make it go faster?" Unfortunately the answer is, "Not within the guidelines of A156.19."

The two classes are quite different, and it takes more than just throwing a switch to make the same unit do both jobs. It is possible, of course, to reprogram a unit made to meet A156.10 so that it operates more slowly, but the cost per leaf would be three to four times as high as if a low-energy unit of either design were specified.

One way to evaluate low energy operators is by how they meet or exceed cycle testing standards. About two years ago, LCN proposed to BHMA that a one-million cycle standard be set as a minimum test life, and a 300,000 cycle standard was incorporated into A156.19 in 1997. Previously, there were no cycle test standards for low energy operators, but the possible replacement of standard closers with low energy operators to meet ADA guidelines created a problem.





A standard closer must pass a two million cycle test to meet Grade 1 ANSI standards, although this will drop to 1.5 million cycles in the next edition. If a Grade 1 door closer is replaced with a low energy operator with the lower requirements, the 1 to 5 cycle test ratio decreases the potential mean time between failures.

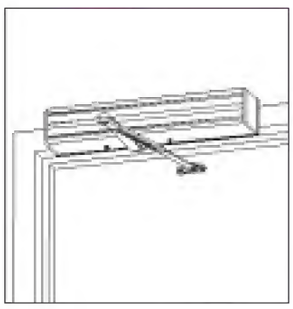
Other Features

The best approach is to select the best unit for opening, whether it be for conventional or ADA application, and adjust related factors to achieve the desired results. Part of making a low energy operator work while still meeting the expectations of the

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general public is to select the right sensors and actuation systems, locating them properly so the door will operate more or less as expected. Moving the detection zone further away from the door, for example, gives more time for the door to open so an able-bodied person can enter without interference. Often a separate manual button is provided for those with disabilities.

Actuating an automatic operator can be done in a number of ways. The most reliable is probably to install a manually operated switch, usually a large round or square "pie plate" that is easy for those with disabilities to operate. This works best with the powered closer approach, since the closer functions normally to control the door swing unless the switch is activated to power the operator.

Although a hard wired switch on both sides of the door is probably the lowest maintenance and most dependable approach, installation of the switches away from the door may sometimes be difficult. This problem may be solved by using a wireless transmitter, similar to a garage door opener, to send the signal to the operator.

A variation is to use a scanning actuator, which is more common with automatic operators that function every time than with powered closers that only operate when required. This technology uses a motion sensor, which is microwave-based and detects motion around the door area. Another type uses passive infrared (PIR) detection, which senses body heat. This type may provide greater safety because it will detect a person standing still in the doorway area and hold the door open. However, a scanner can be confused by other heat sources. The ideal approach is to use a combination of both: a motion sensor to check for move-ment and an infrared unit to react to body heat.

Generally, door operators have a set of fire alarm inputs and can be wired into the fire alarm system. Most fire marshals want these types of doors inactivated during a fire alarm situation, since closing and latching fire doors takes precedence over ADA opening force limits. This is a case where the powered closer design may be preferred, since it requires less effort to operate when power is interrupted because there is less drive mechanism to be back driven manually.

One final concern, when moving into more complex hardware and access control systems such as these, is the need to understand the wiring. However, it is not as complicated as it may appear. Manufacturers generally provide helpful instructions but need to take the lead in offering more training, both for distributors who have to sell and install the units and for users, who may have to adjust and maintain them. TNL

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Airbag Service Checklist

by Steve Young



Airbags steering columns have been in wide use on domestic vehicles since 1988. Many locksmith have avoided servicing these steering columns out of fear. Fear of an accidental deployment, fear of liability problems and fear of the complexity of the job itself.

The possibility of an accidental deployment while servicing an airbag steering column is minimal. Most insurance companies who write policies for locksmiths now offer a special rider for airbag steering column service. With the proper training, there is no reason to fear servicing an airbag steering column.

The following checklist is designed to help locksmiths who have had the proper training through the job of servicing a General Motors airbag steering column. This checklist should be used in the same way that an airplane pilot uses a checklist before takeoff. As you go through the job, follow each step in the proper order so that you do not skip a step.

This checklist is not a substitute for training. Before you attempt your first airbag job, make sure that you have had adequate training. If you would like more information on airbag steering columns, Tech-Train Productions offers two videotapes on the subject. In addition, The National Locksmith also offers several books on the subject.

Since many GM vehicles that are equipped with airbags are also equipped with VATS,(PassKey) a separate checklist is included for servicing VATS equipped vehicles. When servicing a vehicle that is equipped with both VATS and airbags it is essential that you perform all of the airbag operations first.

One of the first steps in servicing a GM airbag steering column is to disconnect the battery. The battery should never be re-connected until all airbag operations are complete. Interrogating the VATS system requires that the battery be connected in the vehicle. So, only after all airbag procedures and tests are complete should you begin interrogating the VATS system.

I. AIR BAG STEERING COLUMN CHECK LIST

1. Before disassembly: (if you have a working key.)

a. Turn ignition to "on" position and observe air bag warning light. If light comes on, stays on for several seconds and then goes off, or if light blinks for several seconds and then goes off, this indicates that air bag system is operating properly-proceed to next step.

If light does not come on, or if light comes on and remains on, or if light blinks and continues to blink, this indicates that the air bag system is not operating properly; refer job to dealer.

b. Turn front wheels to straight-ahead position.

c. Proceed to section II.

2. Before disassembly: (if you do not have a working key.)

a. If lock can be picked or operated via try-out keys, turn ignition to "on" position and observe air bag warning light.

If light operates properly (See "a" above) proceed to section II.
If light does not operate properly (See "a" above) refer job to dealer.

b. If lock cannot be picked or operated via try-out keys: Question vehicle owner about operation of air bag warning light. If you feel comfortable about doing the job, proceed to next step; if not, refer job to dealer.

II. DISCONNECT ELECTRICAL SYSTEM

1. Electrical considerations

a. Is the radio an "anti-theft" radio? If so, inform vehicle owner that the battery must be disconnected.

b. Are there any auxiliary power sources such as cellular phones, battery backed alarms, etc.? If so, inform vehicle owner that they must be disconnected.

2. Disconnect negative battery terminal and isolate terminal.

3. Disconnect any auxiliary power sources.

4. Wait 15-20 minutes before proceeding any further. Wait 20-25 minutes on corvette.

5. After waiting proper amount of time, remove air bag (S.I.R.) fuse or fuses.

6. Disconnect air bag wire at CPA connector located at the base of the steering column.

III. MECHANICAL DISASSEMBLY

1. Remove air bag module from steering wheel.

a. Loosen or remove torx screws securing air bag module to steering wheel.

b. Disconnect horn wire from tower of turn signal canceling cam.

c. Disconnect air bag module at CPA connector located on rear of module.

d. Place air bag module in a safe place with trim cover up.

Continued on page 88 (DHI page 28)

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Continued from page 86
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2. Remove steering wheel.
a. Remove steering wheel nut.
b. Install wheel puller, making sure not to tighten puller bolts more than five turns.
c. Pull steering wheel.
3. Remove coil assembly (clockspring).
a. Place tape between inner and outer portions of coil assembly.
b. Remove tru-arc ring.
c. Gently, pull coil assembly over the end of the steering shaft.
4. Remove wave washer.
a. CAUTION: Wave washer will occasionally stick to back side of coil assembly. Do not lose wave washer.
5. Remove steering shaft lock plate.
a. Install lock plate compression tool.
b. Release lock plate retaining ring.
c. Remove steering shaft lock plate.
6. Remove turn signal canceling cam.
7. Remove turn signal switch.
a. Remove turn signal arm.
b. Remove hazard warning switch control knob or lever.
c. Remove turn signal mounting screws.
d. Gently, pull turn signal switch over end of steering shaft.
8. Remove key buzzer switch.
9. Remove lock cylinder retaining screw.
10. Remove lock cylinder.

IV. MECHANICAL REASSEMBLY

1. Replace lock cylinder.
2. Replace lock cylinder retaining screw.
3. Replace key buzzer switch.
4. Replace turn signal switch-CAUTION: Do not pinch wires.
5. Reattach turn signal arm and hazard warning knob or lever.
6. Replace turn signal canceling cam.
7. Replace steering shaft lock plate.
a. Replace lock plate onto steering shaft.
b. Start lock plate retaining ring onto steering shaft.
c. Install lock plate compression tool.
d. Secure lock plate onto steering shaft with retaining ring.
8. Replace wave washer.
9. Replace coil assembly.
a. Slide coil over end of steering shaft-CAUTION: Do not pinch coil assembly wire.
b. Remove any slack in wiring by pulling wire bundle from the base of the steering column to prevent wire from contacting steering wheel lock plate.
c. Replace tru-arc ring.
d. Remove tape.
10. Replace steering wheel.
a. Guide air bag wire through proper opening in steering wheel.
b. Align steering wheel onto splines on steering shaft-CAUTION: Do not pinch coil assembly wire.
c. Replace and tighten steering wheel nut (33 lb-ft).
11. Replace air bag module.
a. Attach air bag wire to CPA connector at rear of air bag module.
b. Attach horn wire to tower of turn signal canceling cam.
c. Seat air bag module onto steering wheel-CAUTION: Do not pinch air bag wire.
d. Secure air bag module to steering wheel.

V. ELECTRICAL REASSEMBLY

1. Reconnect air bag wire CPA connector located at base of steering column.
2. Replace air bag fuse or fuses.
3. Reconnect battery-CAUTION: Make sure no one is in the vehicle.

VI. TESTING

1. Reenter vehicle from passenger side.
2. Turn ignition switch to "on" position.
3. Observe air bag warning light.
a. If light operates properly (See section I) job is complete.
b. If light does not operate properly (See section I)
c. Repeat section II above.
4. Check that all electrical connections are correct.
a. Reassemble column and retest system.
b. If problem cannot be located and solved, refer job to dealer.

I. VATS/PASSKEY CHECK LIST

Before Interrogation - (No key code no resistor code number) NOTE: If you have reason to believe that the car battery may not be fully charged, see troubleshooting, section III.

1. Is Vehicle Equipped With An Air Bag?
a. If air bag equipped, see air bag section - obtain key code number from lock. CAUTION: Perform all air bag operations before beginning interrogation.
b. If not air bag equipped; obtain key code number by normal disassembly of steering column.
2. Make a working "mechanical" key from key code number, using an appropriate blank such as Strattec 321631, Ilco P1098AV or Curtis/EZ B62 for the single-sided systems. On double-sided systems use Strattec 322465, Ilco P1106 or Curtis/ EZ B86.
3. Attach interrogator to anti-theft system: (Under-dash attachment - old style connector.)
a. Remove hush panel to expose wiring.
b. Separate two portions of VATS connector and attach to interrogator.
4. Attach interrogator to anti-theft system: (Under-dash attachment-48 pin bulkhead connector.)
a. Remove hush panel to expose wiring.
b. Expose bulkhead connector (fuse panel below dash may have to be moved).
c. Separate two portions of bulkhead connector and install "48-pin" adapter.
d. Attach interrogator to matching plush on "48-pin" adapter.
5. Through the keyway attachment-ByPass adapter.
a. Slide "mechanical" key into ByPass adapter.
b. Insert key and ByPass adapter into ignition lock.
c. Attach ByPass adapter to interrogator.
6. Through the keyway attachment - Plastic key.
a. Copy cuts of mechanical key to plastic key.
b. Clean ALL burrs and "fuzz" from key.
c. Insert plastic key into ignition lock.
d. Attach interrogator to plastic key.

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II. INTERROGATION

1. If vehicle is equipped with a manual transmission, clutch MUST be depressed during each starting attempt.
2. Select the resistor value you wish to try. NOTE: #1 resistor value is not used on vehicles made after 1988.
3. Attempt to start car.

a. If car starts: Correct resistor value has been chosen - go to step 6 below.

b. If car does not start: Correct resistor value has not been chosen - go to step 4. below.

4. Turn ignition off. Set interrogator to the next value you wish to.
5. Wait three minutes or more and go to step 3. above.
6. Select a VATS key blank with the resistor value shown on your interrogator.

a. Double-check the value of the key blank chosen.

b. Copy the cuts from your "mechanical" key onto the selected key blank, test the key in the vehicle, and the job is complete.

IMPORTANT NOTES ABOUT THE "SECURITY" LIGHT

Make sure that the "Security" light operates correctly (see below). If the security light does not light, the VATS system is probably not operating and interrogating the system is a waste of time!

OPERATION OF THE "SECURITY" LIGHT

With Correct Resistor: "Security" light will light for 3-5 seconds then go out.

With Incorrect Resistor: "Security" light will light and remain lit as long as the ignition is on.

With an "open circuit" (bad pellet, bad wiring, bad contacts etc.): "Security" light will not light (On some vehicles the "Security" light will blink rapidly in this situation.)

NOTE: On vehicles equipped with a factory installed alarm system the "Security" light will blink slowly if the door is open.

NOTE: On some vehicles the "Security" light will remain lit after a starting attempt with an incorrect resistor value. On these vehicles use the "Security" light as a timer. When the "Security" light goes out it is time for the next starting attempt.

NOTE: Only turn the key once per starting attempt. Turning the key extra times will add time to the delay period.

It is not necessary to actually start the vehicle to determine the correct resistor value if you observe the "Security" light carefully. If the "Security" light comes on briefly then goes out, you have found the correct value-regardless of whether the car starts.

III. TROUBLESHOOTING

1. Car will not start after trying all fifteen resistor values:

a. Verify that clutch was depressed if car is equipped with a manual transmission.

b. Check battery voltage. If voltage is less than 10VDC charge or replace battery.

c. With ignition turned to start position, use voltmeter to read voltage across VATS lead from the VATS module below dash or through ByPass adapter.

If voltage is 5VDC, VATS system is working. If no voltage is read VATS system is not working.

2. Intermittent starting problem:

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Strattec Part Numbers

Key #	Resistor Value*	Single Sided	Double-Sided	Large-Head	Roadside Code**
1	0.402	594201	N/A	N/A	N/A
2	0.523	594202	596772	598512	CN
3	0.681	594203	596773	598513	CN
4	0.887	594204	596774	598514	GP
5	1.130	594205	596775	598515	KA
6	1.470	594206	596776	598516	N5
7	1.870	594207	596777	598517	UN`
8	2.370	594208	596778	598518	XB
9	3.010	594209	596779	598519	GA
10	3.740	594210	596780	598520	NP
11	4.750	594211	596781	598521	FY
12	6.040	594212	596782	598522	C5
13	7.500	594213	596783	598523	XY
14	9.530	594214	596784	598524	KB
15	11.800	594215	596785	598525	UW

** K OHMS*

*** Various roadside assistance organizations may give the resistor value as a code number rather than a number between one and fifteen. No code number is assigned to the number one resistor value because it was discontinued before this code system went into effect.*

a. Clean VATS pellet and contacts inside ignition lock with electrical cleaner such as LPS.

3. Test VATS lead from lock - interrogator method.

a. Disconnect lead below dash and connect interrogator.

b. Insert VATS key into ignition lock.

c. If your interrogator has an LCD screen, the value of the key should appear on the screen.

d. If your interrogator uses a "key match" LED, adjust your interrogator so that the LED lights.

e. Rotate the key through all positions and observe LCD screen of LED.

If LCD screen or LED remains constant while key is being turned, VATS lead is O.K.

If LCD screen or LED flickers or changes while key is being turned, VATS lead or lock is bad-replace lock.

4. Customer's key suddenly stops working, but will still turn:

a. Test resistor value of customer's key (use digital ohmmeter).

b. If resistor value is not correct (see chart of resistor values), the resistor pellet may have been damaged by heat; interrogate system beginning with value closest to the value read from the key.

c. If resistor value is correct test VATS system and VATS lead, see above. TNL

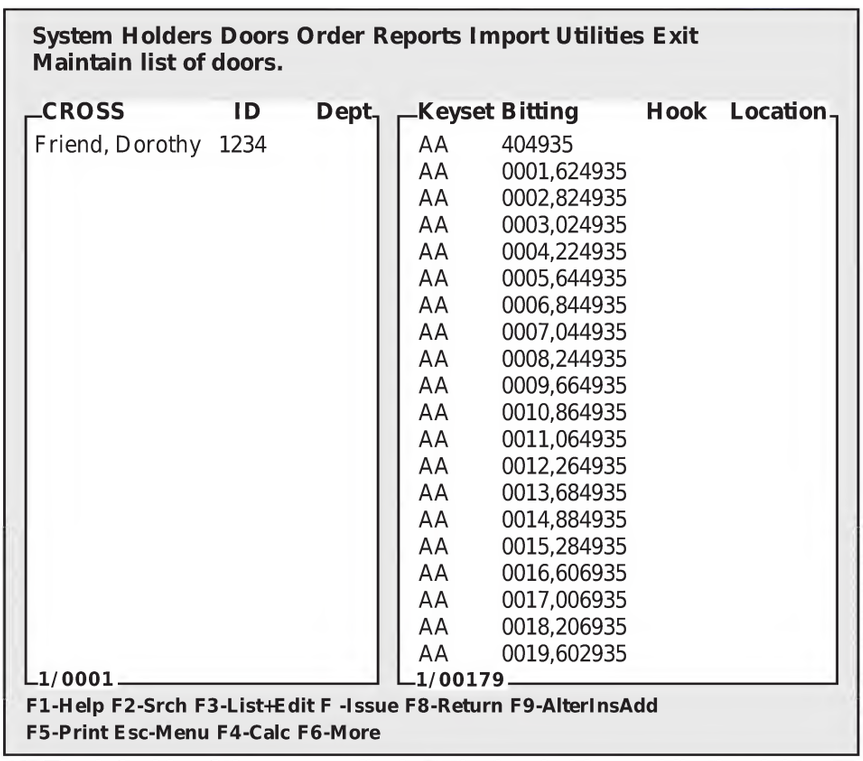
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Locksoft's Key records Management



1. The left side of the screen displays the key holders, while the right side displays the door information.

After designing and installing a masterkey system, only half the job is complete. The next requirement is to record each key in the system and who is in possession of what key or keys.

Far too often this aspect of designing a master key system is overlooked. Yet, besides properly designing a master key system, key tracking, tagging and identifying is just as important.

Key control software tracks the keys in a master key system, and the holders of those keys. Locksoft's Key Records Management program, KRM, does that and more.

KRM uses a split screen for its primary functions. The left side of the screen displays the key holders, while the right side displays the door information, which includes the keying. *(See Illustration 1.)*

The key holder information consists of first and last names, ID, department, phone, address, city, state, zip and remarks. An additional 5 user-defined holder fields is also available. The user-defined fields may be used for any information the administrator of the system would find useful. Some possible uses would be physical description (height, weight, hair color, eye color), shift the person works, etc. The program requires the name fields for a holders entry; all the other holder fields are optional. *(See Illustration 2.)*

The doors records include keyset, bitting, hook, location, heading, hand, finish, lock # and remarks *(See Illustration 3.)* In addition, 10 user-defined fields are available for the door information. As with the user-defined holder fields, these can be used for anything the administrator wishes. They might be used to track other hardware on the door (closer, hinges, etc) or the service history of the door.

To simplify the data entry process, and to prevent data entry errors, the keying information may be imported from a file generated by Locksoft's MK2 or MK3 master keying programs Similarly, the holder information may be imported from a file which usually

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can be extracted from the organization's personnel data.

Keys are issued to key holders from either the holders or the doors window. Receipts may be printed for key issue and key return operations.

Three levels of password may be set. Passwords are established in the Utility/Setup function, accessible only by entering the master, or level 1, password. In addition to entering the various passwords, this function provides for setting protection of user-defined fields, and making key bittings viewable or not viewable by users with each of the level 2 and level 3 passwords.

When the master password is used to enter the program, the user may view and change any information field. With the level 2 password, the user may view any fields, except that he will not view the bitting if it was marked as not to be shown for the level 2 password. He may modify any fields except protected fields. Keyset and bitting are protected against modification by the level 2 user, as are any so designated user-defined fields. With the level 3 password, the user may view data only, not modify it. In addition, he will not view the bitting if it was marked as not to be shown for the level 3 password.

The Utilities/Setup function also provides a pinning calculator screen. In the pinning calculator, the user can specify the formulae for bottom, master, build up and top pins. These formulae are used to calculate pinning charts for specific keysets, as requested by the user. *(See Illustration 4.)*

Reports, which may be printed or written to disk files, help the user to manage the key records. A wide variety of reports are available.

Visit the Locksoft web site, www.locksoft.com, to download a demo version of KRM. While there, check out the other fine Locksoft products and download the master keying program demos as well.

Contact: Locksoft, Inc., P. O. Box 129, Hastings, NE 68902-0129, Telephone: (402) 461-4149, FAX: (402) 461-4359, e-mail: 71165.3426@compuserve.com, Web site: www.locksoft.com TNL

Holder

First: Dorothy Last: Friend
ID: 1234 Dept:
Phone:
Address:
City: St: Zip:
Remarks:

Field 1 Field 2
Field 3 Field 4
Field 5

2. The key holder information consists of first and last names, ID, department, phone, address, city, state, zip and remarks.

Door

Keyset: AA 0001 Code: 624935
Hook: Location:
Heading: Hand: Finish:
Lock#:
Remarks:

Field 1 Field 2
Field 3 Field 4
Field 5 Field 6
Field 7 Field 8
Field 9 Field 10

3. The doors records include keyset, bitting, hook, location, heading, hand, finish, lock # and remarks.

Pinning Calculator Parameters

Top Master Key (TMK): 404935
Control Key (CTK):
Bitting (BTG): From Doors File
Top Pin Formula (TP): 13CTK
Build Up Formula (BUP): (CTK+10)(BP+MP)
Master Pin Formula (MP): ABS(TMKBTG)
Bottom Pin Formula (BP): MIN(BTG,TMK)

ESC - Exit

F1 - Help F4 - Pinning Calculator F10 - Form Complete ECS -Exit

4. These formulas are used to calculate pinning charts for specific keysets.

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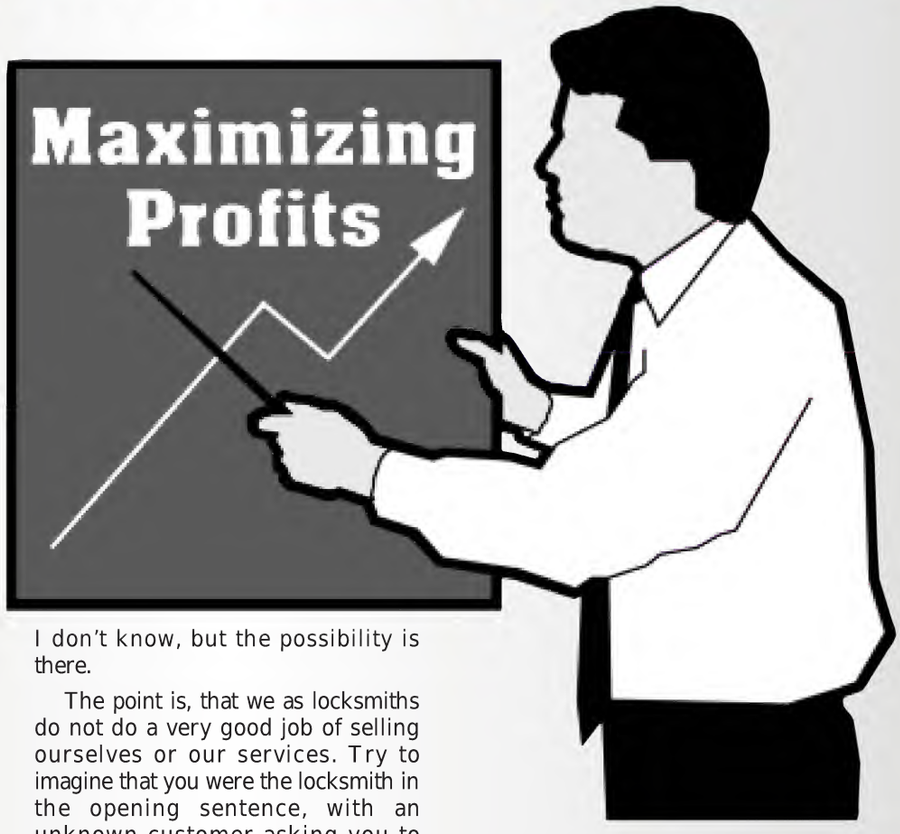
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Maximizing Profits



by
Don Shiles



"Good morning, XYZ Locksmith, may I help you?"

"Yes, I need a deadbolt installed on my front door."

This is probably a fairly common occurrence in most locksmith shops. What is important though is what happens next. Is it possible that you look at this as a minor job and relegate it to the bottom of your priorities? Do you tell the caller you are really busy and can't get to it until next week? Do you tell them that you will fit it in as soon as possible and try to do it on the way to or from another job? Or do you recognize this for what it is, a chance to make money and win a new customer?

Let me digress for a moment and tell you what happened to me recently. I received a call late on a Thursday afternoon. It was the local bank and they wanted their front door lock changed. I asked them if the lock had failed and needed to be replaced. They told me that the lock worked fine, but they had an unfortunate situation and they needed the lock changed. When I asked them if it needed to be changed that night they said no. I told them that I could simply rekey the lock if it was in proper working order and that I would be there at 9:00 a.m. the next morning.

I was there when they opened and found they had an Adams Rite lock with a Yale cylinder in proper working order. I repinned the lock, cut them a few keys and was on my way in a short time. Later I received a letter from the manager of the bank thanking me for my promptness and professionalism. She told me they had called three different locksmiths prior to calling me. One said he couldn't get to it for a week or so; one said he would try to get there on the following Wednesday or Thursday and the other one said he would try to make it on Monday afternoon. I am sure all three of these shops felt that this small job was not worth their effort to treat it as the emergency the bank felt it was.

As a consequence of taking that small job, I have received two other calls from the bank and they now consider me to be their locksmith. Whether or not this will spread to the other local branches of that same bank, I don't know, but the possibility is there.

The point is, that we as locksmiths do not do a very good job of selling ourselves or our services. Try to imagine that you were the locksmith in the opening sentence, with an unknown customer asking you to install a deadbolt. Even if you said yes and went right out and installed the lock for them, you are still cheating yourself. Let's look at what could have happened if the conversation had gone something like this.

"Good morning, XYZ Locksmiths, how may I help you?"

"I need a deadbolt installed on my front door."

"I can do that for you. Can you give me some information? What kind of deadbolt would you like me to install and what kind of door do you have?"

Now what is going to happen? Either the customer has a deadbolt he or she wants you to install or they need to buy one. If they have their own, is it sufficient for their needs? Does it have at least a 1" throw on the bolt? If they want you to furnish one, what kind do they want or need? They probably don't know what type of door they have, at least not in detail. You will have to ask questions. Does it have a window, if so, they need a double-keyed deadbolt. What kind of lock is already on the door? They haven't said so, but what they are expecting is that they will be able to open the deadbolt lock and their front door lock with the same key. Do you know what kind of lock they have on their door?

Did you notice their use of the word need, rather than saying they want or would like to have a deadbolt? What has happened to make them feel that way? You need to keep this in mind when you go out to do the job. When I am out on a job, if possible, I say something like this. "Obviously you are concerned about security (otherwise they wouldn't be having me install a deadbolt), why don't I take a look at your other doors and locks just to check them out. It won't cost you anything and maybe I can give you some ideas of what you could do." I then do a security survey of their home, check the doors, locks, windows, etc.

They may need deadbolts on other doors, reinforced strike plates, double-sided deadbolts to replace single ones when there is an adjacent window. They may have defective locks or insecure ones. They may want locks changed (if necessary) so that a single key will open all of their exterior door locks. In addition, I have recommended motion detectors, alarm systems, locks for sliding doors, security lighting, closed circuit television monitors and in-home safes. We are talking large ticket items in some of these cases. Not everyone is going to purchase these items, but some do.

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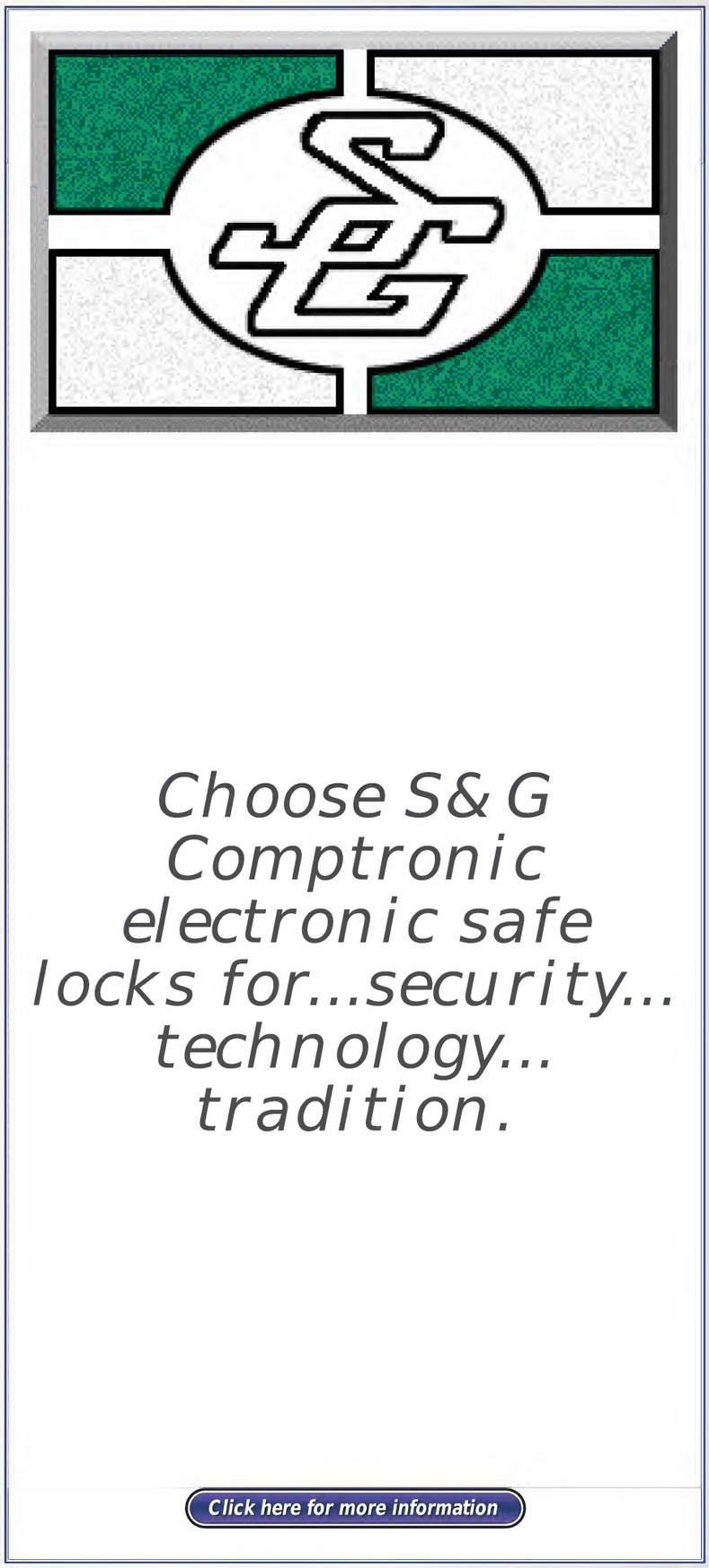
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By simply talking to your customer, you can find out their concerns and needs. With a little effort you can turn that $50.00 deadbolt job into several hundreds of dollars, and more importantly, you will have turned that caller into a permanent customer and even a friend. As locksmiths, the biggest thing we have to sell is our time and our expertise. There isn't much we can do about our expertise except to study, take classes and learn and there are only so many hours in a day. So what can we do? We can make our hours more productive. If you do it right, believe me, you will find that these efforts will pay off in larger, higher-paying jobs during your working hours. The best part is, your income will go up proportionately. You don't have to be a salesman or do any hard selling, all you have to do is be professional in your behavior and presentation.

One of the things I have noticed about locksmiths in general is we don't do a very good job of appearing professional in the eyes of our customers. Obviously, we don't go out on a job wearing a three-piece suit and tie, but then we aren't trying to appear to be lawyers. Come to think of it, why would you want anyone to think you were a lawyer anyway? But we should look like a professional locksmith. We can wear clean clothes that are neat. We should be bonded and have something advertising that fact. Our vehicles should be clean and neat with a professional-looking sign.

Outside of all that, there are some things that we can do that don't cost money and yet are among the most important things of all. We need to behave in a professional manner. This includes being polite, friendly, helpful, and knowledgeable about our business. Ask yourselves, if you were a customer, would you want to come back to a place where you were treated the way you or your employee treated them. If your answer is anything other than a resounding yes, you need to make some changes. We are not handymen or women, we are not laborers, we are members of one of the oldest professions in the world. If we all do our part in educating our customers, act professional, and do the best work we can do, we will all benefit from the increased appreciation for our skills.

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Harloc Old Style Knob Lock

by Jim Langston

Rekeying the old style Harloc knob lock is fairly easy. *(See photograph 1.)* If you have a key, begin by inserting the key and then pull out on the inside spindle with the lock in the locked position. *(See photograph 2.)* I find if you hold the knob in the up position, pull out on the spindle and rotate the key to the 4 o'clock position, you can pull the cylinder out and rekey it. *(See photograph 3.)*

If you do not have a key, you must hold out on the spindle with a pair of vice grips and pick the lock. Once the lock is picked, turn it to the 4 o'clock position and release the vice grips. The lock cylinder should come out.



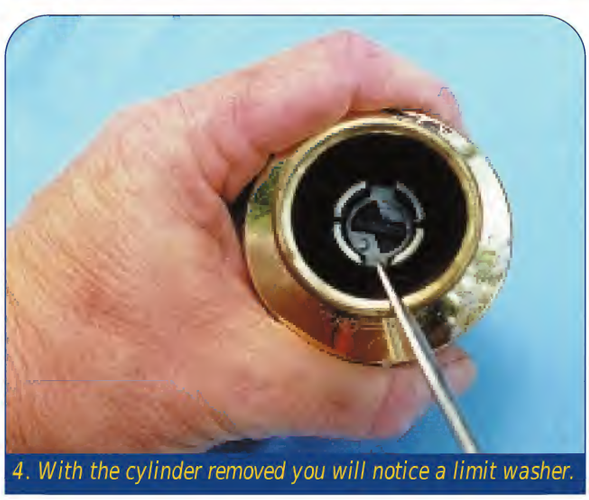
1. An old style Harloc that still exists.



2. Inserting the key and then pull out on the inside spindle.



3. Pull out on the spindle and rotate the key to the 4 o'clock position.



4. With the cylinder removed you will notice a limit washer.

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5. The washer has a small projection on it which must be facing you.



6. Remove the "E" clip at the rear of the cylinder.

With the cylinder removed you will notice a limit washer inside the knob. *(See photograph 4.)* This washer is a timing washer and must be put back in the right position or the cylinder will not stay in the knob when you remove the key. The washer has a small projection on it which must be facing you with the projection in the lower left hand corner when putting it back into the knob. *(See photograph 5.)*

With the cylinder removed from the knob, remove the "E" clip at the rear of the cylinder. *(See photograph 6.)* The plug can now be removed from the housing for rekeying. *(See photograph 7.)*

After the timing washer is in the correct position, turn the key in the plug to the 4 o'clock position and install it back in the knob. With the spindle pulled back, turn the key to the 12 o'clock position and release the spindle. Now you should be able to remove the key. The lock is now back together and ready to use.

For more information on Harloc products call: (502) 477-8822, 800-542-7562. TNL



7. The plug can now be removed from the housing.

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IC Lock Introduction

Part 5 – Servicing Interchangeable Cores: Arrow-Best-Falcon

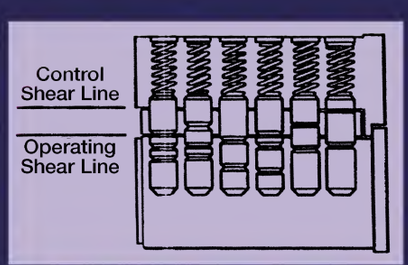
by Gerry Finch

This installment will explain various ways of removing the core from the housing and decoding the core, when the control key is not available.

PICKING THE CORE TO REMOVE IT FROM THE HOUSING

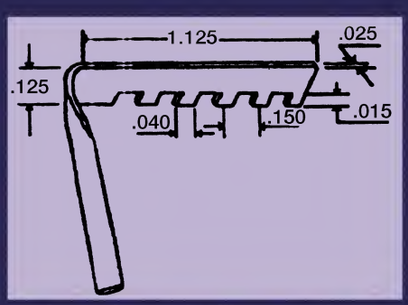
Many times the control key is not available to the locksmith. To remove the core from the housing for service, some other method must be used. The most professional way is to pick the core to the control shear line and retract the locking lug. The core can then be removed from the housing.

Remember, there are two shear lines in a core. The operating shear line which all master and change keys operate and the control shear line which only the control key operates. *(See illustration 1.)*



1. There are two shear lines in a core. The operating shear line which all master and change keys operate and the control shear line which only the control key operates.

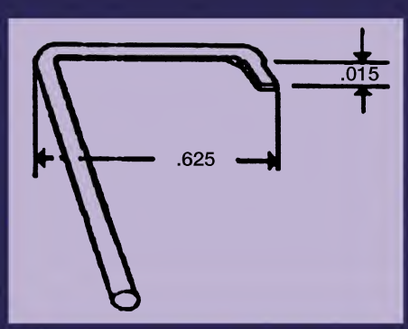
To pick the core to the control shear line a special turning tool is required because torque (turning pressure) must be applied to the sleeve only. A standard turning tool will only apply torque to the plug which will bind the pins between the plug and the sleeve. The pins must bind between the sleeve and the shell before the core can be picked. The tuning tool shown in *illustration 2*, will put turning pressure (torque) on the sleeve if used properly.



2. The tuning tool will put turning pressure (torque) on the sleeve if used properly.

The turning tool must fill the bottom of the keyway so that it does not lose contact with the bottom holes in the sleeve. Due to the different keyway configurations, the turning tool will generally not fit the keyway as snugly as needed. Use a piece of spring steel, thinned down to the proper thickness, to put into the keyway along side of the tool to make a snug fit. This will prevent the tool from disengaging from the holes in the bottom of the sleeve. The teeth on the tool must be just long enough to sit in the holes in the sleeve. If the teeth are too long, they will seat in the small holes in the shell making it impossible to apply torque to the sleeve. This tool is available from the author or you can make your own from spring steel. It is best to make your turning tool by fitting it to a disassembled core, one you can afford to destroy.

Another very simple turning tool can be made by taking a piece of piano wire and bending it. *(See illustration 3.)* To put torque on the sleeve, it is only necessary to



3. Another very simple turning tool can be made by taking a piece of piano wire and bending it.

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contact one of the holes in the bottom of the housing. Use a piano wire with a large enough diameter to allow for the filling of the side of the tang flat (the part that enters the keyway). The width of the tang should be just wide enough to enter the keyway snugly and not slip out of the bottom holes in the sleeve when torque is applied. Because of the many different keyways you may be required to service, it may be necessary to make several of these tools. These turning tools are used at the bottom of the keyway and torque is applied clockwise (left).

Standard picking procedures are used, however, you should review the manner in which the pins are stacked in the core. A knowledge of the position of the pins in the pin stack is necessary when picking the core to the control shear line.

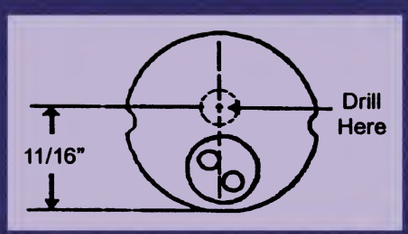
It is the top pins that will be across the shear line between the shell and the sleeve. The control pins are located directly below the top pins. The control shear line is the split between the top pins and the control pins. This split is in very close proximity to the division between the sleeve and the shell, therefore each stack of pins need be raised only slightly before the shear line is reached. Most failures to pick these cores to the control shear line is due to the locksmith using picks that are so large that just inserting them into the keyway raises the pins to a point where either the control or master pins are across the control shear line. Each stack of pins should be raised only slightly while torque is applied to the sleeve.

To emphasize just how little each stack needs to be raised, if the control key is cut to a number 9 depth, the pin stack need not be raised. The control pin and the top pin split at the control shear line. Pinned to accommodate a number 8 depth, the split is only .0125" (twelve and a half thousandths of an inch) off the shear line. Remember the A-2 system uses increments of only .0125".

The best picks to use to pick the core is a set of Mini-Picks. The picks made by Lab are only .020" thick and small enough to fit into the keyway and do not raise the pins until you activate them.

OTHER WAYS TO REMOVE THE CORE

If you are unable to pick the core, there are other methods you can use to remove the core. Most are destructive and either the shell or core will generally be damaged, but when it is absolutely essential that you make a control key to service the system with, something has to be sacrificed. If the core is in a rim or mortise cylinder which has been removed from the locking device, the following method can be used to remove the core from the housing. For the rim cylinder, remove the tailpiece and bracket which are secured by screws. If it is a mortise cylinder, the cam will have to be pried off with a screwdriver. Once the bracket or cam has been removed, measure up from the bottom of the housing to a point 11/16" of an inch. *(See illustration 4.)* Drill a 1/4" hole on the cylinder center line through the back of the housing, being careful not to hit the core. There is a slight space between the housing and the core and you will feel this when the drill breaks through the back wall of the housing. Stop drilling when you feel the drill lunge ahead. The shear line between the shell and sleeve will now be visible.

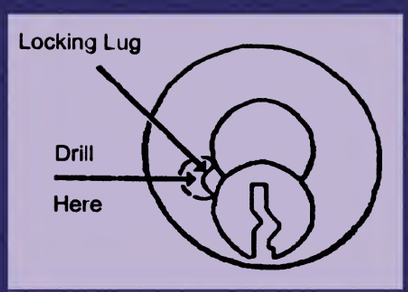


4. Measure up from the bottom of the housing to a point 11/16" of an inch. Drill a 1/4" hole on the cylinder center line through the back of the housing,

With a blank key and a standard .015" curved shim, the core can now be removed from the housing using standard shimming procedures. Dipping your shim in a powdered lubricant can be a big help in shimming. Once you have shimmed the core, retract the locking lug and remove the core from the housing. You can now decode or service it.

ANOTHER WAY TO REMOVE THE CORE

If the shell and core assembly are still in the locking device, there are other ways you can remove the core. The first method will destroy the housing, but it must be remembered that at least one core must be obtained for decoding if you are to service the system. Destruction of one housing will be the cheapest way to go. Generally there are mortise, rim, key-in-knob locks and padlocks in a system. Whenever possible, use a mortise or rim cylinder housing. They are less expensive than knobs and padlocks.



5. The object of drilling this hole is to permit withdrawal of the core from the housing without retracting the locking lug.

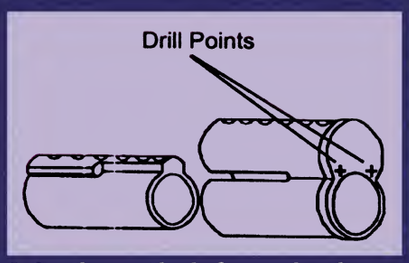
First drill a hole at the position shown. *(See illustration 5.)* The hole should be slightly larger than the locking lug of the core. The object of drilling this hole is to permit withdrawal of the core from the housing without retracting the locking lug. Do not let the drill bit touch the shell of the core assembly. You can use a "V" shaped file to finish the hole so no obstructions remain to block the locking lug. Once the hole is drilled and the locking lug is visible, a pick or cut key that does not fit the core is inserted into the keyway and the core can be withdrawn from the housing. After the core has been removed and serviced, it can be placed in a new housing and returned to service.

STILL ANOTHER WAY

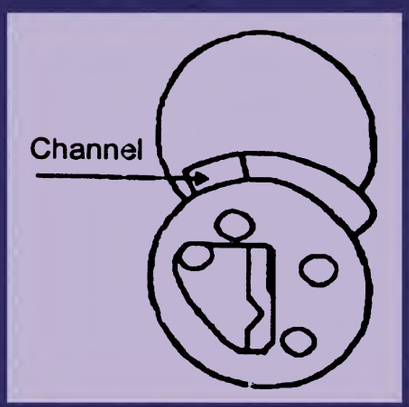
Another method of removing the core from the housing is to drill a small hole at either of the drill points shown. *(See illustration 6.)* This part of the core is a cap about .085" thick. Directly behind the hole you drill is a hollow channel running the length of the core on the right. This is the channel the locking lug is retracted into when the control key is used. *(See illustration 7.)* On the left there is also a short channel from the face of the locking lug to the face of the core.

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6. Another method of removing the core from the housing is to drill a small hole at either of the drill points shown.



7. This is the channel the locking lug is retracted into when the control key is used.

After you have drilled the hole, use a pointed tool such as an awl or blunted ice pick to pry off the face of the core. Use either or both holes. The cap is that portion that covers the entire top half of the core and rings the plug on the bottom half of the core. The plug face is solid. A pair of needle nose pliers will be needed along with the prying tool to remove the cap. It may take a little muscle.

Once the face cap has been removed the control shear line is visible and can be shimmed with a standard .0015" curved shim and a pick. Insert your shim into the control shear line (between the shell and the sleeve) and with your pick raise each stack of pins very slowly. Remember the control shear line is between the top pins and control pins so each stack should be raised very little. Do this with each pin stack until the shim is fully inserted. With a turning tool or the tip of a key blank rotate the plug clockwise until it stops, about 15 degrees.

CAUTION: The method above does not work on Falcon cores manufactured prior to 1985, but should work on all other cores and on Falcon cores manufactured after 1985. You can identify the Falcon Cores made prior to 1985 by the "C" ring that was used as a plug retainer and key stop. The new Falcon cores now use a riveted on key stop and plug retainer.

ANOTHER WAY

Another method of removing the core from the housing is to insert a blank key into the keyway, drill a 1/8" hole above and on the center line of the keyway. *(See illustration 8.)* The object here is to destroy the pins below the top pins so the top pins will drop below the control shear line. The top pins are the only pins used to determine the bitting of the control key. Only the springs will remain across the shear line. While removing the drill from the hole, put pressure to the right on the drill bit. This should retract the locking lug into the core. If it does not, use the tip of a screw driver to turn the plug clockwise and retract the locking lug. Always be aware of the number of pins in the core and stop drilling when the last pin has been drilled.

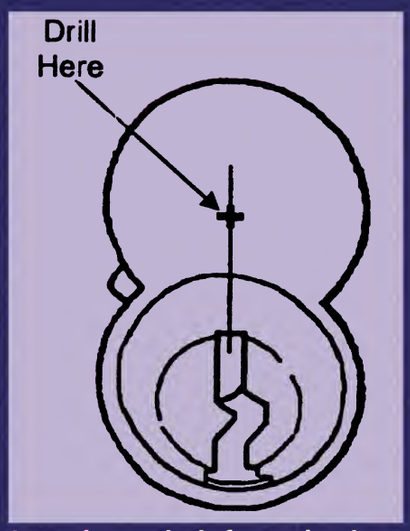
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8. Another method of removing the core from the housing is to insert a blank key into the keyway, drill a 1/8" hole above and on the center line of the keyway.

This is not my favorite way of removing the core from the housing for the following reason. The length of the top pin is unknown therefore we cannot be certain as to exactly where the drill point should be. The shortest top pin used is .050" and the longest is .162". What we do know is that our stack will be .397" of an inch in height and when we insert a blank key into the keyway the pin stack is raised to its highest point.

We said the longest top pin used was .162" which means if we measure down from the top of the stack .162" thousandths of an inch we will be at the point where the control pin and the top pin meet. To figure the point where we must drill, we must subtract a little more than half the diameter of the drill bit we use, from the point where the top and control pins meet.

To put it simply, insert a blank key into the core. Measure up from the top of the key .397" on the vertical center line of the key. Next measure down .162" plus a little more than half the diameter of the drill bit you are going to use. This will be the point at which you should drill. Remember when drilling to leave the blank key in the keyway. Next remove the blank key. It may be necessary to remove pieces of the drilled pins from the keyway to allow the top pins to drop below the control shear line.

The reason for this lengthy explanation is that most of the drill points in articles I have seen on this subject are very approximate and will more than likely cause you to destroy some of the top pins.

Remember, it is the top pins and only the top pins that we use to decode the core to obtain the bitting of the control key.

DECODING THE CORE FOR THE CONTROL KEY

Many times the locksmith will find it necessary to make a control key for an interchangeable core system. Often a customer will move into a new location that has an existing I.C. system and the previous tenant has not left a control key. You, the locksmith are called and asked to rekey the system. To do this in a professional manner, you must have a control key to remove each of the cores and rekey them. We have already explained how to remove the core when no control key exists so now lets decode the core.

Before decoding the core you must determine the type of system it is. Is it an A2, A3 or A4 system? You generally can identify the type of system because you almost always have access to several of the keys in the system. By measuring the depths of cuts and comparing them with the charts in your I.C. pin kit the type of system can be identified.

You can also determine this by measuring the bottom pins and checking them against the pin lengths shown on the chart in your I.C. pin kit. The smallest bottom pin in all three systems is the same length, .110". Measure each of the bottom pins. Remember the A2 system uses increments of .012", the A3 system uses increments of .018" and the A4 uses increments of .021". With this information you can determine which system your core is pinned to.

Once the proper pinning system has been determined, remove only the springs and top pins from the core. It is not necessary to remove the other pins. Carefully keeping the top pins in their correct order, measure them for their exact length in decimal fractions with dial calipers or a micrometer. Remember, coding is done from the rear of the core.

After the core has been removed from the housing and access to the top pins has been obtained, use the following method shown in to determine the bitting of the control key. The examples shown here are for an A2 system. We gave you the measurement of all the pins in an A2 system in a previous installment of this series.

Measure the length of the top pin:	*.150*	*.112*
Convert to the coded number of pin:	*129*	
Subtract the coded number from:	*13*	*13*
This is the control key bitting in this chamber:	*1*	*4*

There may be times when you may not have ready access to a pin length chart and must decode the core. Use the following method when this happens. First measure the length of the top pin. Next multiply this number by the number 80. The answer you get will not always be an even number. If it isn't raise it to the next even number. This number will be the coded length of the top pin. Now subtract this number from 13. The answer you get will be the bitting of the control key in that chamber.

Measure the length of the top pin:	*.062*	*.075*
Length multiplied by 80 equals	*4.96*	*6.00*
Above number raised to whole number	*5*	*6*
Subtract above number from 13 and the control key biting in this chamber is:	*8*	*7*

TO ALL READERS OF THESE ARTICLES

If you have any questions concerning the information presented in this series of articles or need further info or help, the author can be contacted at 310-515-2643 or Fax: 310-217-1594 between the hours of 8 a.m. Pacific D.S. time (11 a.m. E.D.S.T.) and 6 p.m. P.D.S.T. (9 p.m. E.D.S.T.) TNL

DHI PAGE 42

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THRU THE KEYHOLE

A Peek at Movers & Shakers in the Industry

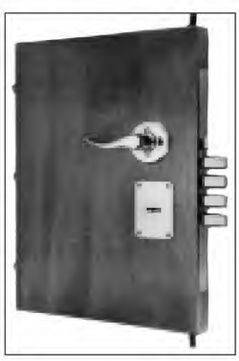
ATTENTION MANUFACTURERS AND DISTRIBUTORS:
Would you like your company and products to be profiled in *Thru The Keyhole*? Please call Editor, Greg Mango, at (630) 837-2044.

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After three years of investigation Bramlett-Siso Security Systems in Pasadena, California offers an extraordinary line of locks produced by one of the largest manufacturers in Europe; MOTTURA SERRATURE DI SICUREZZA of Italy. Mottura's products are leading sellers throughout Europe, South America and the Mediterranean.

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For hinged doors - commercial and residential; a mortise style, single key double locking deadbolt system which drives deadbolts into the top, bottom and latch side of a door and incorporates three static dead bolts on the hinge side. This lock is maintenance free, does not use a cylinder (so it can't be drilled) and is impervious to attack by acid. This lock has now been UL approved for three hour fire endurance. Systems 9-36OSLR and 9-36OSLL.



Also, soon to be available, is a version of the 9-360 lock driver which will accommodate popular US cylinders and provide an inside thumb turn for emergency exit.

For hinged doors - commercial and residential; an internal surface mounted system which accommodates lock cylinders and is available in both a single locking and double locking version. Again, it provides locking on all points of the compass while being much faster to install, especially for retrofit. System 38.468.

For sliding doors and shutters; tong deadbolt systems (picture really thick ice tongs as a locking mechanism). These locks are surface mounted and are available in three versions. The 35.361 incorporates an inside thumb turn only, 35.361 provides and inside thumb turn and outside key and 35.363 provides for only an inside key.

For info call: 800-441-1654 or e-mail at: BRAMLETT-SISO@MSN.COM. TNL

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HPC's KeyTrail

by Marty Jalove

Who has the key to this door?

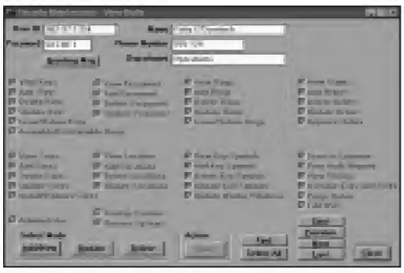
What doors does this key open?

Are those files secure?

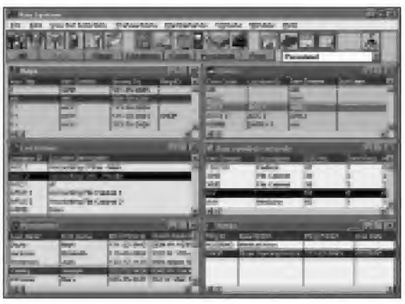
Who has access to where?

These are the questions that run through the mind of many office and building managers every day. Not having quick, accurate answers to these questions can be a very serious problem.

HPC's KeyTrail is the solution. *(See photograph 1.)* Imagine being able to see a list of the people who have keys to the supply room with the click of a button. How about being able to see what locks are where and whether they are keyed alike or keyed different in just seconds. KeyTrail will even display what keys are on the maintenance room key ring and who has it.



1. HPC's KeyTrail allows you to see a list of the people who have keys with the click of a button.



2. You can set up an unlimited number of security profiles to give limited or unlimited access to users on an individual basis.

HPC's KeyTrail is a Window's based software program that offers you complete management of keys, personnel, locations, and a whole lot more.

KeyTrail has a very flexible security structure. It allows you to set up one or many system administrators. In turn, they can set up an unlimited number of security profiles to give limited or unlimited access to users on an individual basis. *(See photograph 2.)* This will allow some people to only have the ability to view records, while giving others the ability to loan out keys without access to duplicate information.

KeyTrail's main screen is divided into six windows, each window gives you instant access to a different database of information. *(See photograph 3.)* The first three windows are the backbone of this program. These three windows will help you keep track of the Keys, the Location they open, and the Personnel that hold them.

The second set of three windows make KeyTrail easier to use while offering greater security options. The Cores (locks) window has been separated from Locations so that you can keep track of all of your cylinders whether they are installed or in stock. Key Symbols is where the bitting, depth, and spacing information are kept. Key Symbols has been separated from Keys and Cores so that you can let personnel loan out Keys or view Cores without giving them access to vital duplication information.

Lastly, Rings give you the ability to put a number of Keys together. Once together, they can be moved and assigned as one. Moving a Ring of 10 Keys is easier and more efficient than moving each key individually.

Personnel and Locations information can be typed in or imported from another system in either tab delimited or comma delimited format. Understanding and working with KeyTrail is very easy to pick-up. Each maintenance window has similar commands that allow you to Search through your list of records allowing you to add new records and update or delete existing information. *(See photograph 4.)*

Key Symbols is the duplicating information needed to create new keys and cores. Here KeyTrail will keep track of interchangeable core (IC) systems, digital keypad or padlock combinations, file cabinet, even automotive locks, and much more. You can enter this information manually or download existing



3. KeyTrail's main screen is divided into 6 windows giveing you instant access to a different database of information.



4. Each maintenance window has similar commands that allow you to Search through your list of records.

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systems including master key systems developed in HPC's MasterKing.

Based on your Key Symbols, you can make Keys and Cores by pressing the appropriate buttons on the Key Symbol maintenance window. *(See photograph 5.)*

Once all this information is in place you can start assigning the Cores to the appropriate Locations and the Keys to the appropriate Personnel. You can also create Rings. Assign any number to keys to each Ring and then assign these Rings to Personnel just like individual Keys.

KeyTrail utilizes "drag & drop" technology to make the job of assigning records very easy. For example, just click on the key and drag it to the employee.

You will find that KeyTrail is extremely simple to use. You are provided with easy to understand icons, drop down menus, and keyboard shortcuts. There is a row of buttons at the top of the main screen. These buttons help you display how records are connected.



5. Based on your Key Symbols, you can make Keys and Cores by pressing the appropriate buttons on the Key Symbol maintenance window.

To find out who has which keys, just select that person and click on the Keys button at the top of the screen. The Keys window now shortens to only list the keys held by the selected person.

KeyTrail provides a complete audit trail that tracks all transactions and can generate optional work orders so that work cannot be completed without proper authorization. With these work orders you can track and control cylinder and lock installation and removal as well as key duplication. In addition, the issuing and returning of keys, rings and more.

KeyTrail provides numerous reports including: personnel and the keys they hold; keys and the location they open; locations and the personnel that have access to them; lost key report and overdue key report; the complete audit trail; and much more. *(See photograph 6.)*

KeyTrail can be installed on a network server or an individual PC with at least a 386 microprocessor and Microsoft Windows 3.1 or higher. KeyTrail only needs 4MB of RAM and 5MB of hard disk space. Moreover, when you connect your HPC CodeMax to your PC, KeyTrail gives you the ability to instantly send key symbol information so that you can quickly create new keys.

KeyTrail comes with a comprehensive Help file and is backed by HPC's Technical Support Department. For more information or free demo disks on KeyTrail or HPC's other programs contact your authorized HPC Distributor or HPC direct at 847-671-6280 or www.hpcworld.com. TNL



6. KeyTrail provides numerous reports including: personnel and the keys they hold; keys and the location they open; locations and the personnel that have access to them; lost key report and overdue key report; the complete audit trail; and much more.

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BEGINNER'S CORNER

Medeco 10-50 Series Locks



by Jim Langston

This month I will give an overview of the standard original style Non-Biaxial 10-50 series Medeco locks and keys. *(See photograph 1.)* Before I go into detail on servicing these locks, I need to tell you the basic principle by which these locks operate.



1. Original style Medeco lock and keys.

Basic Design

Medeco locks incorporate two basic locking principles; that of a standard pin tumbler lock mechanism in conjunction with a locking sidebar. Both must be in proper alignment for the lock to operate. A Medeco key cut to the correct depth and angle of cut is what properly aligns the pins with the shear line and sidebar, unlocking the dual security features. *(See illustration A.)*

The Key

Medeco keys are nickel silver and bear two distinct features. First, each cut on a Medeco key can have one of three possible angle cuts: Left cut, Center cut or Right cut. *(See photograph 2.)* The left and right angle cuts are 20 degrees off center.

This means the key serves a dual purpose. One is to have the proper depth of cut, the other is to rotate a pin within the cut at either a left, center or right angle.

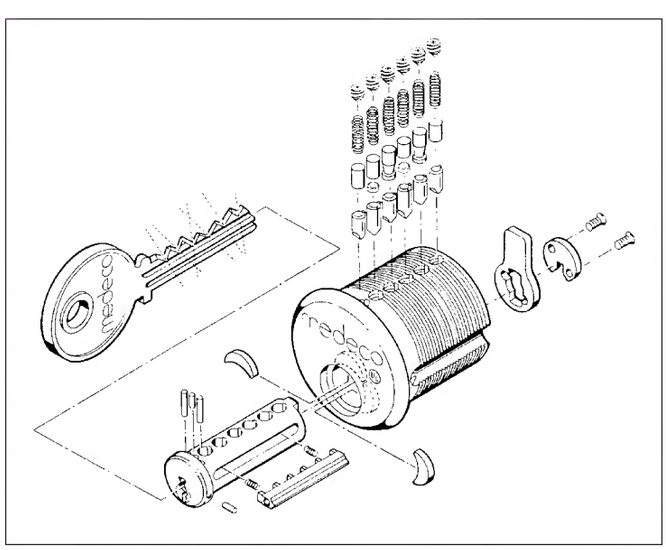
If you are trying to decode the angle's on a Medeco key by sight, I have found that if you hold the key by the head or bow with the tip pointing away from you, you can see the angles are right, left, and center. *(See illustration B.)* When holding your key in this manor you can see the center cut is straight across, the next cut is a right angle cut which is pointing toward your right hand, the next cut is a left angle cut which is pointing toward your left hand.

The Pins

The pins also have a duel purpose and design. One is that they are chisel pointed at either a left, center or right angle. *(See illustration C.)* This allows the pin to rotate within the pin chamber when a key is inserted. A pin with the correct chisel point angle will seat properly when matched to a key cut of the matching angle. *(See illustration D.)* If the angle of either is different, the pin will not seat properly even if the length or depth is correct.

There is also a slot cut along the side of the pin. The slot is designed to accept the fingers of the sidebar when properly positioned. The pins must be elevated to the shear line and rotated to the correct angle simultaneously, aligning the slot with the sidebar before the sidebar will retract and the plug will turn within the shell.

For added security, Medeco also utilizes mushroom top pins. *(See*



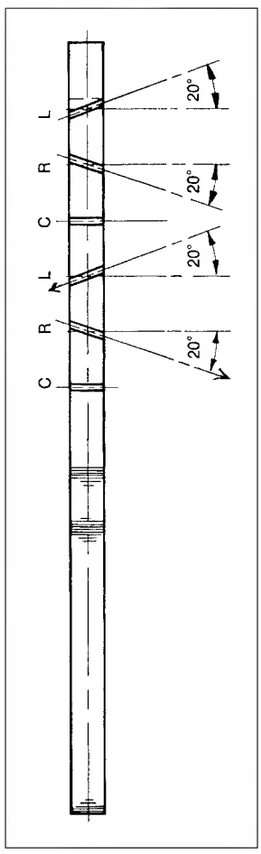
A. key cut to the correct depth and angle of cut is what properly aligns the pins with the shear line and sidebar.



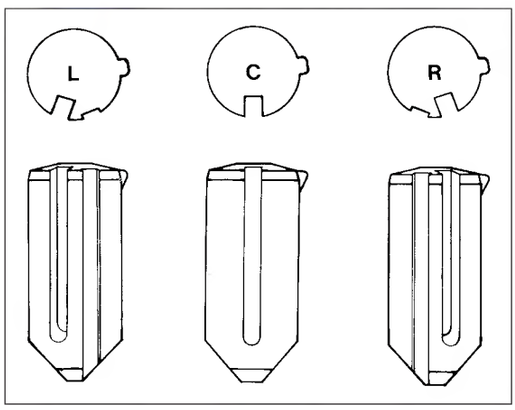
2. Medeco key can have one of three possible angle cuts: Left cut, Center cut or Right cut.

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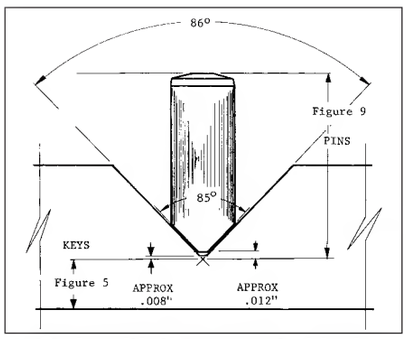
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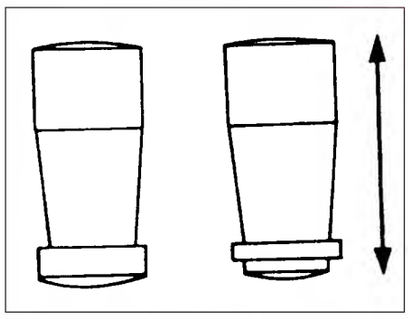
B. I have found that if you hold the key by the head or bow with the tip pointing away from you, you can see the angles are right, left, and center.



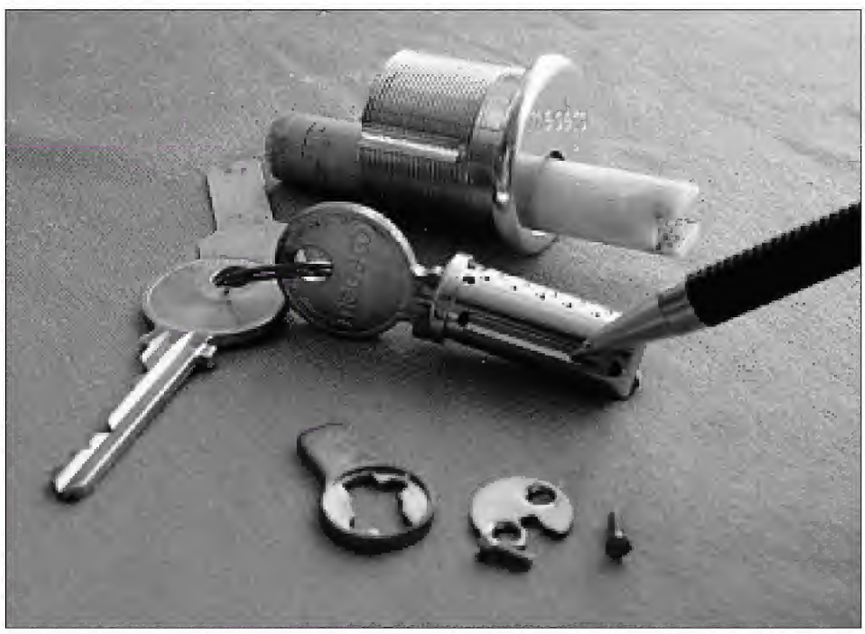
C. The pins are chisel pointed at either a left, center or right angle.



D. A pin with the correct chisel point angle will seat properly when matched to a key cut of the matching angle.



E. For added security, Medeco also utilizes mushroom top pins.



3. The sidebar on the plug of the lock.



4. The fingers on the sidebar will line up with the groves on the pins.

illustration E.) This adds another lever of security and pick resistance.

The Sidebar

The pen is pointing to the sidebar on the plug of the lock. *(See photograph 3.)* There are two springs under the sidebar which keep outward pressure on the sidebar at all times. When the proper key is inserted into the lock the fingers on the sidebar will line up with the groves on the pins. *(See photograph 4.)* When you turn the plug with the key the sidebar will retract as the fingers enter the groves in the pins allowing the plug to turn. *Illustration A*, shows the design of the sidebar and spring locations.

Double Secure

The dual-locking principle and the cylinder's exacting tolerance accounts for Medeco's extreme pick resistance.

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Medeco cylinders are also protected against other forms of physical attack by hardened drill resistant inserts. On the mortise locks there are two hardened crescent shaped plates within the shell protecting the shear line and the sidebar against a drill attack. *(See photograph 5.)*

There is also four hardened pins within the plug. Three on top of the plug also designed to prevent a shear line drill attack and one on the side designed as an added level of protection against a sidebar drill attack.



5. On the mortise locks there are two hardened crescent share plates within the shell protecting the shear line and the sidebar.

When the plug is removed from the shell, the crescent drill protectors will drop out, so be sure to replace them when assembling the cylinder.

The hardened crescents and drill protecting plug pins can be seen in *illustration A*.

Servicing

The only real difference between servicing Medeco locks from standard pin tumbler locks is for Medeco there are three pin choices for every pin increment. For example: Medeco has 6 pin increment depths and for every depth increment there is a left, center and right angle choice. For example: If the first pin chamber is a number 4, it can be either a 4L, 4C or 4R, depending on the angle cut of the key for that position. So even though there are only six pin depths, there are a total of 18 possibilities.

It is also not recommended that a Medeco lock be rekeyed using a plug follower and replacing only the bottom pins. For proper lock operation it is required that all pins (bottom, top and master) and the spring for the chamber being rekeyed be dumped and a new stack inserted. This eliminates the possibility of over-loading or stacking the pin chamber and the lock malfunctioning.

The only other component that needs to be handled which is not present in standard pin tumbler locks is the sidebar. Under normal lock rekeying operations, the plug does not need to be removed eliminating the need to handle the sidebar. However, if for some reason the plug is removed the sidebar can and usually will fall out. When replacing be sure the two sidebar springs are present.

There is also a correct way and wrong way to install the sidebar in the plug. If it is inserted incorrectly the keyway broaching will not be centered in relation to the shell. If this occurs remove the plug and flip the sidebar over and the plug will properly align.

Conclusion

Medeco locks offer very good security. Medeco also has cam locks, deadbolts, mortis cylinders, and padlocks. Medeco offers a lock for just about any application you may need.

For more information on Medeco locks call: 800-839-3157.

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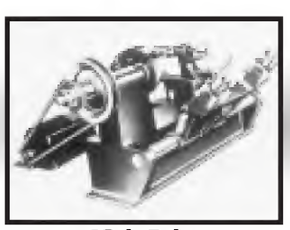
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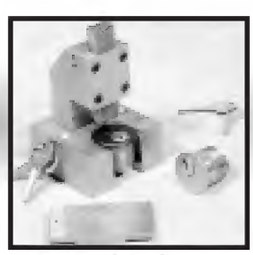
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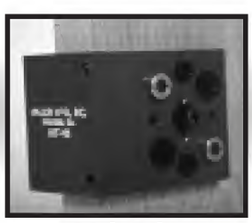
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21st Prize

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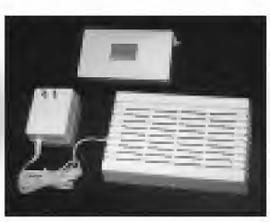
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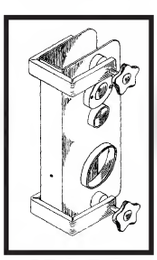
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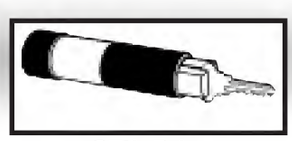
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180° Thumb-Turn

The Fire Marshal instructed my customer to change the thumb turn on his Adams Rite MS style lock so that the mortise thumb-turn would require a turn of no more than 180° to expedite exiting the premises. I recommended that he use an Adams Rite 4710 deadlatch and paddle handle instead, but he didn't want to spend the money for it. While not worth my time from a monetary standpoint, here's how I solved the problem for the customer:

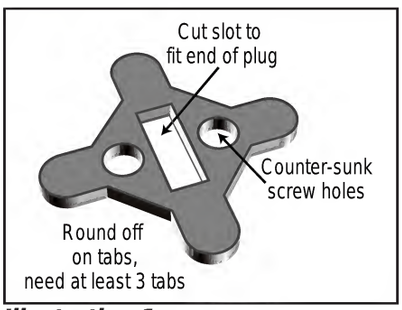


Illustration 1.

I used a small piece of scrap galvanized steel (don't try brass it's too soft) to fashion the tailpiece as you see in *illustration 1*. The piece of steel I used was 1-1/4" x 1-1/4". File, cut, grind and shape the material as shown in the illustration. Drill a pilot hole in the center and use a Dremel tool to cut the opening to fit over the end of the thumb-turn's plug. Then drill the holes for the mounting screws and countersink them so the retainer screws will tighten down flush with the surface of the four-way tailpiece.

Installing this four-way tailpiece is a little tricky since you have to take the mortise cylinder lock out, insert a small magnet through the outside of the lock and past the actuator on the Adams Rite lock and then place the tailpiece on the magnet from the thumb turn side.

After removing the factory tailpiece from the thumb turn, screw the thumb turn into the MS lock until the edge of the thumb turn just clears the inside edge of the lock case. Now rotate the thumb turn slightly until you have a clear view of the mounting screw holes in the thumb turns plug. Use the magnet to place the tailpiece over the riser on the plug and insert and tighten one retainer screw.

Remove the magnet and continue to turn the thumb turn 180° until the other retainer screw hole is visible. Insert the second retainer screw and tighten. Now finish threading the thumb turn into the MS lock and when properly positioned, tighten the Adams Rite set screw. The thumb turn will now lock, or unlock the MS lock with a turn of only 180°. Now you can re-install the outside key cylinder.

The only difference in the operation of the lock that I noticed was that the outside cylinder would only turn about 120° in either direction. I tested the "throw" of the hook bolt and the restricted motion of the key did not seem to affect the proper deadlocking of the hook bolt, or the unlocking of the hook bolt in any way.

David Craig
Illinois



AERO LOCK TRY-OUT KEY SET WINNER:
Double Check those GM Codes:

When you obtain key codes from any GM Roadside Assistance Program, for Passkey or VATS ignitions, always cut a mechanically correct key first, to make sure that the ignition hasn't been replaced and to verify the code.

To cut a "test" key without wasting a VATS or Passkey blank, you can use an ILCO #P1098AV (B62) or a STRATTEC 3321631, for single sided VATS ignitions. For double sided VATS ignitions use an ILCO #P1102 (B82) or a STRATTEC #597500.

By using these test keys to check the accuracy of the mechanical code, I have saved myself the cost of a number of VATS blanks.

At least twice, I have been given incorrect codes. Both times, the numbers in the code were correct, but the letter in the code was wrong.

Although I haven't been given the wrong pellet number yet, I'm sure this could happen too. However, with a working mechanical key and the proper VATS or Passkey test equipment it should be a simple matter to test for the proper resistance value before actually cutting the key.

Chuck Frazier
California

A Few Words From Jake...



by Jake Jakubuwski

Just before I sat down to compile this month's Technitip column, I was working on the manuscript of a book. When I tried to back up some files, I lost about twenty pages of my manuscript! Since I'm as close to computer illiterate as one can be and still be able to make the computer do things that I need to have done (most of the time, anyway), it was quite an interesting time that I spent trying to recover the lost material.

After a few, heartfelt "golly geez," I finally stumbled on a "Recovered Document" file. When I opened it, all that was on the screen was a bunch of symbols, not my twenty missing pages. So, I went looking. And looking.

I finally, went to "Edit" pushed "Select All" and then went back to Edit and pushed "Paste Special." The next thing I knew, my document was on the screen! Not in the format that I was working with, but by golly, it was there!

So, what's the point? The point is: Finding the answer to a real toe-stubber of a problem with my computer is no different then what we do everyday as locksmiths. Something happens that shouldn't and we try to figure out why and then figure out a solution.

Sometimes those solutions are just good common sense, sometimes they require deep thought, and sometimes, we design, make or modify a tool to implement the solution that we developed.

The next time you are doing what you do and figure out a neat way to save some time, make the job go easier or use a tool in a new manner, you need to write it down and send it in to me.

Why? Because I'm giving away thousands and thousands and thousands of dollars worth of books, tools, locksmith bucks, equipment and product as prizes this year. Don't you think you should get your share?

Y'all listenin', now?

Continued on page 122

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Continued from page 120



STRATTEC RACING JACKET WINNER:
Falcon/Best Quick Pin Chart

I'm sure that many locksmiths have their favorite methods of pinning interchangeable cores and devising pinning charts, but I thought I would share my own favorite method with your readers.

I think the accompanying illustration is self-explanatory. (See *illustration 2.)* Just remember to read from the bottom up and that chamber #1 is the one closest to the tip of the key.

Walt Thompson
Georgia

Editor's Note: Walt's quick chart will work very well on smaller systems. If you have a large system, there are some great computer programs available for I-core. Also, Falcon puts out a nifty little slide chart for pinning I-cores that will set you back about ten bucks at your favorite supplier and save you hundreds in man hours in the field.

Falcon A-2 Interchangable Core System (Also: Best, Arrow, etc.)
Keys: Change: 598798 TMK:578576 Control: 999878

	Cuts:	Bpins:	Mpins:	C&D pins:
TMK: 5-7-8-5-7-6	0=.3175	0=.110	2=.025	10=.125
CHG: 5-9-8-7-9-8	1=.305	1=.122	3=.037	11=.137
Bpin: 5-7-8-5-7-6	2=.2925	2=.135	4=.050	12=.150
Mpin: 0-2-0-2-2-2	3=.280	3=.147	5=.062	13=.162
Cpin: 14-10-11-11-8-10	4=.2675	4=.160	6=.075	14=.175
Dpin: 4-4-4-5-6-5	5=.255	5=.172	7=.087	15=.200
	6=.2425	6=.185	8=.100	16=.212
	7=.230	7=.197	9=.112	17=.225
	8=.2175	8=.210		18=.237
	9=.205	9=.222		19=.205

Note: Bpin=bottom pin, Mpin=master pin, Cpin=control pin and Dpin= drive pin.
Master pins 4,5,6,7,8 and 9 can also be used as control or drive pins.
ADD FROM BOTTOM UP!

1	2	3	4	5	6
.050 4	.050 4	.050 4	.067 5	.075 6	.062 5
ADD BOTTOM, MASTER AND CONTROL *PINS* MINUS .397 = DRIVERS					
.175 14	.125 10	.137 11	.138 11	.100 8	.125 10
.552, MINUS TOTAL OF PIN STACK & CONTROL *CUTS* = CONTROL *PINS*					
.377	.427	.415	.414	.452	.427
TOTAL PIN STACK AND CONTROL CUTS FROM BELOW					
.205 9	.205 9	.205 9	.217 8	.230 7	.217 8
CONTROL CUTS					
X	.025 2	X	.025 2	.025 2	.025 2
MASTER PINS					
.172 5	.197 7	.210 8	.172 5	.197 7	.185 6
BOTTOM PINS					

*Job:*_____ *Date:*_____

Illustration 2.



HPC PISTOL PICK WINNER:
Buzz-Ted Ford Buzzers

I had a customer who tried to insert their key in the car ignition and when it wouldn't enter the keyway they forced it. In the process the broken brass buzzer activator that was hanging down in the keyway was crumpled and jammed all the way to the back of the keyway. Now, the key would not turn the ignition. Sound familiar? Here's a solution.

Duplicate the customer's key and then use a pair of side cutting pliers to nip the tip of the key off, just at the beginning of the last ramp of the last cut. Now insert the key and try to turn the ignition to the accessory position. If it doesn't turn, tap the head of the key gently with a small hammer and "seat" the key a little deeper in the keyway and try again. You may also have to try pulling the key out slightly to align the spacings with the pins, but this modified key should get the ignition to turn to the "RUN" position so you can depress the retainer and remove the lock from the column.

Ron Armstrong, RL
E-Mail



SARGENT & GREENLEAF 4400 SERIES SAFE DEPOSIT BOX LOCK WINNER:
Tapping Open a Mosler GSA Drawer

One of the most common problems that I encounter with regard to Mosler GSA containers is a broken handle. The high rate of broken handles is probably due to the fact that these are "push-sown" type handles and folks get a little heavy-handed when trying to open them. Here's a quick and easy entry method.

Center-punch the square stump and drill a hole dead center for either an 8-32 or a 10-32 bottoming tap. If you suspect that the bolt work is binding, definitely use the 10-32. Tap the hole using a standard "T" handle tap wrench. Stop when the tap bottoms out.

Dial the combination, retract the bolt and use the tap wrench as the handle to retract the drawer bolts. The

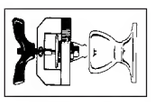
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opening rotation of the handle is clockwise, so you don't have to turn the wrench very far (about 12°) to retract the drawer bolts.

If you feel for any reason, or encounter a problem turning the handle with the tap wrench, back the tap out and insert a hardened 10-32 bolt and use a wrench to turn the stump.

Once the drawer is open, the handle is easily replaced.

Richard Cybrinski
North Carolina



A-1 SECURITY PRODUCTS WINNER:
Breakaway Pull Handle

Recently, in our area the thieves have taken to wrapping chains through the 9" pull handles on commercial doors, attaching the chain to a vehicle and literally ripping the dead latches from the door. I decided to find a solution that would prevent the bad guys from tearing the doors apart.

What I do is remove the pull handle and about three-quarters of an inch down from the head of the retaining bolt, I cut a slot almost three quarters of the way through. *(See illustration 3)*. The principle is the same as the break-away safe handles: Put excessive pressure on the pull handle and the retaining bolt snaps.

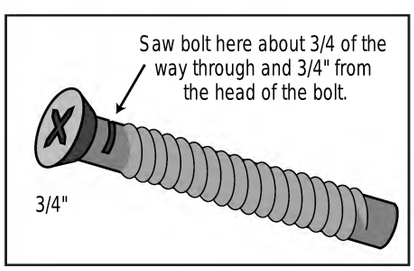
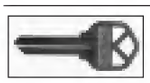


Illustration 3.

By placing your cut just 3/4" below the head of the bolt, you leave a portion of the bolt that can be gripped with Vise-Grips and removed from the handle in the event a thief breaks the pull handle off trying to break into the business.

Kirk Lebert
Canada

Editor's Note: Kirk, it's a good idea. I have to wonder though, if the "breakaway" bolt might give you problems if you try to tighten it too snugly when you install the pull handles? Also, since metal can become "fatigued" would the dynamic stress of the handle being pulled, say a hundred times a day, cause the modified bolt to break? Again, I like the idea, although you may find that on really high traffic doors it's not practical. Let me know how it works out for you.



ILCO KEY BLANKS (100) WINNER:
Cylinder Deactivation

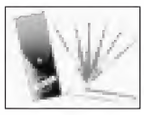
I had a customer who only wanted one outside cylinder out of the four that he had, to allow outside entry with a key. I was going to suggest that he let me simply turn the three he wanted to deactivate upside down so they wouldn't work. Then I remembered that with a tool called a Snake Pick that is designed go through the keyway of the cylinder, the lock could be opened.

I decided to cut the tip off the Adams Rite tailpieces so they could not operate the lock. Then I epoxied the back of the keyway shut to prevent anyone from using a Snake Pick. I also put cylinder guards on all of the doors to prevent wrenching.

Ellis Gibbs
North Carolina



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PRO-LOK PICK SET WINNER:
Putting a Spin On Adams Rite

A customer had lost their keys to an Adams Rite 1850 store front lock and they wanted me to pick the cylinder and rekey the lock. I could only get the lock to pick in the locked direction and did not have my plug spinner with me.

To overcome the problem I went to the truck, got a heavy rubber band and wrapped the rubber band around the handle of my tension tool. I inserted the tension tool handle end into the lock and while holding the tension tool with one hand, I stretched the rubber band in the opening direction of the cylinder with the other.

With the rubber band stretched tightly, I let go of the tension tool and the plug spun to the unlocked position.

Bruce Colgate
Connecticut



TECH TRAIN TRAINING VIDEO WINNER:
Foley-Belsaw Fix

I bought a used Foley-Belsaw key machine from another locksmith and the cutting wheel on it was rusty and dull. I had an extra cutter from another machine, but it had a 1/2" arbor hole and the Foley-Belsaw machine had a 3/8" hole.

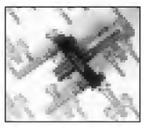
Not wanting to spend the money for a new wheel, I went to Home Depot and bought a package of three-eighth inch grommets and a package of quick setting, two-part epoxy.

I put the male part of the grommet through the half-inch hole on the one cutter and centered it so the wall of the grommet and the wall of the cutter had equal clearance all the way around. Then, I mixed the epoxy and firmly pressed it into the "mold" I had made with the grommet and cutter and allowed it to thoroughly harden.

Once the epoxy hardened, I forced the epoxy and grommet out of the hole and removed the epoxy spacer from the grommet and placed it in the hole of the extra cutter. Now the half-inch hole was shimmed to fit the three-eighths inch arbor on the Foley-Belsaw machine. My total cost was five bucks and a little bit of time.

Joan Yarrington
Texas

Editor's Note: Joan, you showed a lot of creativity by working with the materials you had at hand. Although the epoxy that you mention "hardens like steel" and can be drilled, tapped, sanded and filed, it does not have the "tensile" strength of steel. That is, it will not stand up to physical or thermal shock as well as steel. If you strike a steel cutter a sharp blow with a big hammer, not much happens. If you take a piece of the epoxy and do the same thing, it will crumble. The best bet is to go to a machine shop and buy an arbor shim. In the meantime, put a good lock washer against the wheel of your home-made shim and keep checking to make sure the retaining nut stays T-I-G-H-T! If you begin to detect any "wobble" in your cutter wheel, discontinue its use.



SIEVEKING PRODUCTS GM E-Z WHEEL PULLER WINNER:
Tricking a Transponder

I was asked to cut a key by code for a '98 Chrysler Sebring convertible. I was not told this model was transponder equipped and when I arrived, the key I had previously cut would turn the ignition, but the car would not start.

The customer's original key was stuck in the trunk and when he tried to remove it, he broke the key. That gave me the idea to hold the head of the broken transponder key next to the mechanical key in the ignition. The vehicle started right up.

Once the car started, the customer was able to remove the transponder key head from the vicinity of the ignition since the vehicle only requires the RF signal generated by the key to start the car. Once the engine is running, it no longer needs the RF signal.

Larry Pelzman
New York

Major Manufacturing, Inc.

MAJOR MANUFACTURING WINNER:
Mortising With a Dremel

I use a Dremel tool with Dremel's #115 high speed cutter attachment to finish off latch mortises neatly, cleanly and easily. *(See Illustration 4.)*

First I drill the hole for the strike plate and then install the strike plate. Next, I rout out the remaining wood using the strike plate as a guide or template. My Dremel tool has two speeds and I find that the lower speed is the best for this type of work. It leaves a nice, clean mortise for the latch to fit into without having to use a chisel and hammer.

Illustration 4.



Dave Nissan
Minnesota



SLIDE LOCK'S "Z" TOOL OPENING SET WINNER:
The GM Wafer Jam

I have found that on both the newer GM 10-cut and the older style 6-cut ignitions that the number one wafer occasionally jams and prevents the key from working the lock. It appears that forcing the wrong key or hitting the keyway at the wrong angle with the proper key causes the wafer to jamb or bend.

I solved some of these type problems by lubricating the switch and working the water up and down with a probe. Apparently none of the wafers were distorted enough to require disassembling the lock to correct the problem.

Surprisingly, this past week I had two calls (separate, older model GMs) where the first wafer on the trunk lock was jammed. I was able to correct both problems by lubricating and manipulating the wafer.

Brad McKenzie
Ohio



THE SIEVEKING AUTO KEY GUIDE WINNER:
Nissan Code Puzzle

I often encounter Nissan cars with no codes in the glove compartment. When this happens I go to the passenger door lock. I punch the four digit code into my laptop, and then cut a proper key for the vehicle. However, every once in a while, I find a five digit code, which caused me some confusion until I figured out that I could eliminate the first number and replace it with an "X." I would then have the code I needed to generate a key.

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For example: on one Nissan I found the code 61903 on the cam. I put an "X" in place of the 6 so it would read X1903 which is a valid Nissan code (443122342). I cut the key and found it worked all the locks on the vehicle as it should have.

Berlin Bechtel
E-Mail



JET KEY BLANKS (100)
WINNER:
Sight Reading Master Padlocks

Here's a way to generate keys for Master padlocks when there are no keys, the code has been obliterated and your impressioning skills are not up to key origination for one of these lock.

First, cut a set of depth keys on an M-1 blank or whatever blank fits the padlock you are servicing. This will require as many as seven blanks. To make the depth keys, cut a single depth the full length of the blank. For instance, cut the first key blank with all #1 depths the length of the blank. On the second key blank cut all #2 depths and so forth. For each key run the same depth from the first cut all the way off the tip of the key. In other words, the entire length of each blank represents one depth. Stamp each key with the proper depth.

You use the depth keys to read the tumblers as follows:

Pick the padlock open and keep the plug turned past the shear line. If necessary, hold the plug in that position with your tension wrench. Now turn the padlock upside down so that the bottom pins will bottom out against the wall of the cylinder.

Starting with the #1 depth key, insert the key into the keyway. If it won't clear the first pin, go to the next depth. If a particular key let's say a #4 goes all the way in, you know that all of the cuts are #4 or less.

By using these depth keys, and with a little experimentation, you can often determine two, three and sometimes all four cuts. With practice you can easily determine the first cut and then read the others successfully by using the first known depth as a reference.

Rodger Peck
Maryland

HIGH TECH TOOLS
WINNER:
Cylinder Turning Tool

If you encounter a tough-to-turn mortise cylinder even after you have loosened the screws that hold the Adams Rite lock in the aluminum stile, try using an uncut key blank as a turning tool. Often the uncut blank will give you the torque you need to remove a cylinder that has tightened from corrosion or whatever.

Pete Gamble
North Carolina



LAGARD COMBO GARD
WINNER:
GM Glove Box Potpourri

The squeeze paddle handle glove box lock plug on GM vehicles can be exasperating to remove. I have found that my TruArc pliers (for removing snap rings) work well in spreading the plastic lugs enough to push the plug out.

On the older "top hat" style ignitions the retainer is visible through the slot, or poke hole, when the lock is in the unlocked position, but the plug cannot be removed. With the glove box door in the open position, depress the latch and then depress the retainer and use a tension wrench hooked behind the face of the plug and pull the plug out of the cylinder.

Often customers would bring me a GM glove box lock and wants a door key. For years I told them to bring the car or a door lock. Now I offer them the option of having me cut up to 11 keys to cover all possible factory combinations for the door key bitting. I charge them a buck a key plus ten dollars for decoding the lock.

In a worst case scenario there would be a number three cut next to an unknown pair and the four known cuts requiring an even pair. It would require eleven possible combinations (3-1, 4-2, 5-3, 1-3, 2-4, 3-5, 1-1, 2-2, 3-3, 4-4 and 5-5).

Keep in mind that GM locks have a Maximum Adjacent Cut (MAC's) of two, which means that you can't cut a one next to a four or a two next to a five. The math is as simple as understanding that two even numbers equal an even number and two odd numbers equal an even number. An even number plus an odd number equal and odd number. The six cuts in a GM lock must add up to an even number. Also, there are never more than four of the same cuts in a factory combinated GM plug and there will never be more than three of the same cut values in a row.

Leo Koulogianes
Tennessee

TNL

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Reed Report

Q. *What is an "ejector pin?"*

A. A tool used to drive all the elements of a pin chamber out of certain interchangeable cores.

Q. *What is an "ejector hole?"*

A. A hole found on the bottom of certain interchangeable cores under each pin chamber. It provides a path for the ejector pin.

Q. *What does "DMM" mean?*

A. Digital mutimeter. A device used to measure current, resistance, and voltage.

Q. *What does "EMK" stand for?*

A. Emergency master key.

Q. *The Schlage "J" keyway will also enter what other keyways?*

A. E, EF, F and P keyways.

Q. *When drilling a cylinder open, how do you know where to drill?*

A. Always position your drill at the shear line.

Q. *What is an electric switch lock?*

A. These locks complete and break an electric current when an authorized key is inserted and turned. It is simply a key operated on/off switch.

Q. *Could you please tell me the difference between a Grand Master key and a Great Grand Master key? Simple terms, please.*

A. I have a simple mind, so that will be no problem. A Grand Master key will operate ALL the locks in a group of one or more locks. Under this key there will usually be one specific master key for each group of locks. None of these master keys will open any lock from another group. The Great Grand Master key will open ALL the locks in ALL the groups. Simple enough?

Scatter Shooting while remembering . . . George Duryea

Illustration 1.

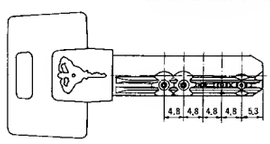
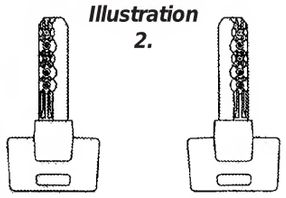


Illustration 2.



The grooves and cuts on a LH key are located on the left side of the key.

The grooves and cuts on a RH key are located on the right side of the key.

Q. *How do you determine the key hand on the MUL-T-LOCK?*

A. MUL-T-LOCK keys are divided into two major groups according to their profiles: right hand (RH) and left hand (LH). To determine the key profile, hold the key in your hand with the tip pointing upward. *(See illustration 1.)*

Cuts are numbered bow to tip, from 1 to 5. The distance from the tip, which serves as a key stop, to the center of the fifth cut is 5.3 mm for both LH and RH keys. The distance from the center of the fifth cut to the center of the next cut, and from that cut to each adjacent cut is 4.8 mm. When a cylinder has 4, 3, or 2 chambers, the first cuts are omitted. *(See illustration 2.)* TNL



Yours For Better Security,

Bill Reed

If you have a question for Bill Reed, would like to talk to him concerning anything in this column, or want to attend a Bill Reed seminar at one of the locations listed below, you may contact Bill directly on his toll free number at: (888) 801-2003.

Oct. 11	**Chicago, IL**	**Dec. 5**	**Orlando, FL**
Oct. 17	**Omaha, NE**	**Dec. 12**	**Salt Lake City, UT**
Nov. 21	**Tulsa, OK**		

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BUSINESS BRIEFS

Security Lock Awarded Top Distributor Honors

Hanchett Entry Systems has presented its leadership award to Security Lock Distributors, naming them the top performing account in the nation.



Shown accepting the plaque for security is their Vice-President, Jeff Schwartz. H.E.S. presents the award each year to the customer with the largest sales of electric strikes, accessories and electromagnetic door holders.

For more information please contact Security Lock Distributors at: phone 800-847-5625, Fax: 800-878-6400, e-mail: SECLOCK@IX.NEYCOM.COM, and web: http://www.seclock.com

DynaLock Corporation Appoints Sales Reps

The company has appointed Hardware Agents as Sales Representatives for contract hardware and locksmith accounts in Michigan, Indiana, W. Ohio and N. Kentucky. They maintain offices in Royal Oak, Michigan (248-288-6500).

For more information contact DynaLock Corp. at 860-582-4761 or fax 860-585-0338.

Darex Industrial Celebrates 25 Years

Darex Corporation is celebrating 25 years of precision drill and end mill sharpener manufacturing. Emphasizing innovative product design and technology, they have introduced more than 15 different sharpeners into the cutting tool market.

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For more information phone 815-874-4030.

NYAIL Holds Monthly Meetings

The New York Association of In-House Locksmiths, Inc. (NYAIL) is an organization based in the Greater New York City area that was formed in 1996 to give locksmiths in an institutional setting a place to meet and share information amongst themselves. Since they do not compete with each other, in-house locksmiths can freely share ideas and information. Meetings are held in midtown NYC on the second Thursday of the month, except July and August.

If you would like to attend a meeting contact Rick Duskiewicz at 212-802-2688. For more information write to PO Box 1439, Madison Square Station, NY, NY 10159-1439 or visit the website at www.locksmith.org.

JLM Wholesale Stocking Trine

JLM Wholesale is proud to announce they are stocking Trine offset strikes for mortise locks. The new Trine EN430 and 435 strikes are recommended for new or replacement installation in metal jambs.



Please call JLM Wholesale 800-522-2940 for complete details on the entire line of Trine Products.

Assa Abloy Electric Locking

Assa Abloy's US operations acquire Securitron magnalock Corporation, one of the leading manufacturers of magnetic locks and electronic door control devices in the US.

Securitron is an important addition to the group, as it will add a significant group of electric locking products as well as open new distribution channels for these products in general.

KABA Sales Manager Appointed

KABA high security locks has just appointed Rick Eisen as Eastern Regional Sales Manager.



In his new KABA post, Eisen will supervise both sales and promotion of KABA Gemini and PEAKS high security product lines distributed in the U.S. and Canada through Best Access Systems' locations.

Security Lock Von Duprin/LCN Booklet and Dealer Meetings

A new six page handbook of electronic and mechanical products made by both Von Duprin and LCN is the latest dealer aid issued by Security Lock Distributors.

The booklet contains descriptive information on Von Duprin touch bar, Crossbar, and Chexit' exit devices, Max Hold shear locks, electric strikes plus trim options and accessories. Important data on LCN closers and door hardware is also included.



Security Lock is also holding "Dealer Ed" Meetings. These are a face-to-face discussions with manufacturers. This service allows dealers to interface directly with manufacturers of electrical and mechanical security products on product specification, application and installation. A "hands on" approach is employed, with



trouble shooting tips, product comparisons and many other factors examined.

To learn about upcoming sessions or information call: 800-847-5625, fax: 800-878-6400, or e-Mail: SECLOCK@IX.NETCOM.COM.

TNL

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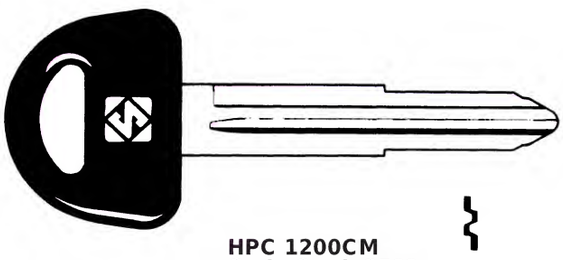
NATIONAL AUTO LOCK SERVICE, INC.
SRi SECURITY RESOURCES INC.
STRATTEC
Major MANUFACTURING, INC.
HPC
ASP
The National Locksmith

KEY CODES



Suzuki

U0001-U2000



Manufacturer: Suzuki
Code Series: U0001-U2000
Key Blanks:
Curtis: SU15
Ilco: X185
Ilco EZ: SUZ15
Jet: HD84
Silca: SZ12
Number of Cuts: 8
M.A.C.S.: 2
Key Gauged: Shoulder
Center of First Cut: .098
Cut to Cut Spacings: .083
Cut Depth Increments: .028

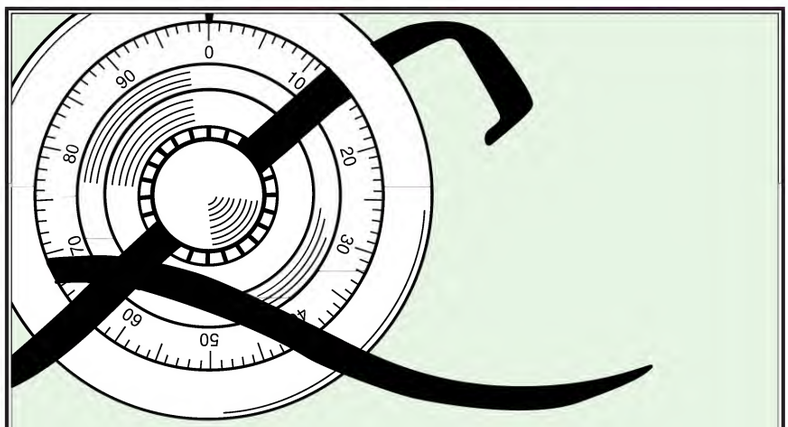
Notes:
Spacings:
1 - .098
2 - .181
3 - .263
4 - .346
5 - .429
6 - .511
7 - .594
8 - .677
Depths:
1 = .326
2 = .299
3 = .271
4 = .244

HPC 1200CM
Code Card: CF88
Cutter: CW-47MC
Jaw: A
Gauge From: Shoulder
HPC Punch:
PCH Card: PF88L, PF88R
Punch: PCH-47
Jaw: A
Framon:
Cuts Start at: .098
Spacing: .083
Block #: 5
Depth Increments: .028
Key Clamping Info:
Curtis:
Cam-Set: DC-50
Carriage: TOY-50
A-1 Pack-A-Punch: PAK-G04

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U0003 12323113	U0034 22132431	U0065 43324331	U0096 42313313	U0127 42123432	U0158 12312324
U0004 42443112	U0035 33312322	U0066 21223444	U0097 23344421	U0128 43443331	U0159 42231224
U0005 34442122	U0036 44324211	U0067 43113313	U0098 43423342	U0129 44324422	U0160 33311243
U0006 32432322	U0037 11342123	U0068 42132442	U0099 21123422	U0130 13423133	U0161 32124334
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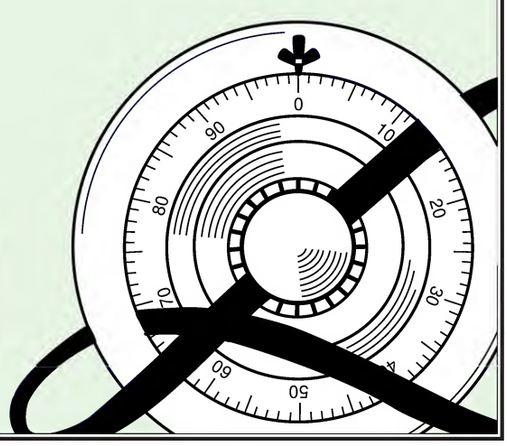
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Lockmasters has a 44 year history of training security professionals.

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U0001-U2000

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Suzuki

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Suzuki
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The National Locksmith's November 1998 Planning Calendar

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DHI Show Orlando, FL Oct 31-Nov 2 (703) 222-2010 **1**	DHI Show Orlando, FL Oct 31-Nov 2 **2**	**3**	**4**	**5**	**6**	Mas Hamilton's Auditcon System 2100 Course Colorado Springs & Montpelier (VT) & San Francisco X-07 Course — Cedar Rapids (IA) (606) 253-4744 X180 **7**
Mas Hamilton's X-07 Course — Cedar Rapids (IA) **8**	Mas Hamilton's Vindicator II Course — Lexington, KY (606) 253-4744 X180 Lockmaster's 5 Day GSA Course & Fundamentals of Electricity Course, Nov 9-13 — Nicholasville, KY (800) 654-0637 **9**	Lockmaster's 5 Day GSA Course & Fundamentals of Electricity Course, Nov 9-13 — Nicholasville, KY **10**	Lockmaster's 5 Day GSA Course & Fundamentals of Electricity Course, Nov 9-13 — Nicholasville, KY **11** *Veteran's day*	Lockmaster's 5 Day GSA Course & Fundamentals of Electricity Course, Nov 9-13 — Nicholasville, KY **12**	Lockmaster's 5 Day GSA Course & Fundamentals of Electricity Course, Nov 9-13 — Nicholasville, KY **13**	Mas Hamilton's Auditcon System 2100 Course Indianapolis & Toronto (606) 253-4744 X180 **14**
15	MBA's DoD/DoE Comb. Lock Training — Nicholasville, KY (888) 622-5495 Mas Hamilton's Vindicator Course Nov 16 — Lexington, KY, Nov 21 — Oklahoma City **16**	MBA's DoD/DoE Comb. Lock Training — Nicholasville, KY Lockmaster's 3 Day GSA Course Nov 16-18 & Electronic Access Control Course, Nov 16-20— Nicholasville, KY (800) 654-0637 **17**	MBA's DoD/DoE Comb. Lock Training — Nicholasville, KY **18**	MBA's DoD/DoE Comb. Lock Training — Nicholasville, KY **19**	MBA's DoD/DoE Comb. Lock Training — Nicholasville, KY Mas Hamilton's X-07 Course Nov 20 & 21— Lexington, KY (606) 253-4744 X180 **20**	Reed Seminar—Tulsa, OK (888) 801-2003 MBA's Prof. Safe Drilling — Nicholasville, KY (888) 622-5495 Mas Hamilton's Auditcon System 2100 Course L.A. & Houston **21**
MBA's Prof. Safe Drilling — Nicholasville, KY **22**	**23**	**24**	**25**	The National Locksmith Closed **26** *Thanksgiving*	The National Locksmith Closed **27**	**28**
29	**30**					

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The National Locksmith

Quick Entry UPDATE

by Steve Young



97-98 Cadillac Catera



1. The Catera was first introduced into North America in 1997.

The Cadillac Catera is based on a European vehicle known as the Opel Omega. The Catera was first introduced into North America in 1997. *(See photograph 1.)* The Catera became the first vehicle offered by General Motors in North America to be equipped with a transponder system.

The transponder system used on the Catera is different from that used on any other GM vehicle. This system was not designed to be programmed in the field. The vehicle is intentionally designed so that in order to program a duplicate key or a replacement key, a special computerized programming tool known as the Tech-2 tool (sometimes called the "scan tool") would be required.

Without the Tech-2 tool, duplicate keys can only be made by way of a transponder cloning device such as the Jet ETD-1. This machine reads the electronic code from the existing key and then programs the new key to be an electronic duplicate of the original.

Early in the 1997 model year some Cateras were equipped with side impact airbags mounted into the front doors. For that reason, I recommend avoiding the front doors and unlocking this vehicle through the rear door.

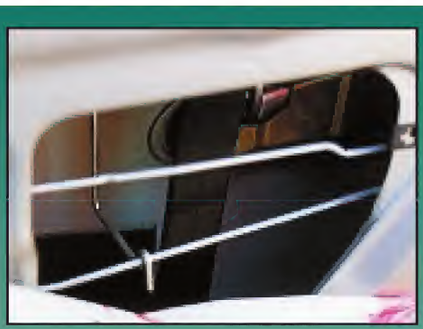
To unlock the vehicle, begin by wedging open the main window of the rear door near the back. *(See photograph 2.)* Insert an inspection light into the door and locate the two horizontal linkage rods. These rods are located at about the same depth as the outside door handle. *(See photograph 3.)* The lower of the two rods is the inside lock control linkage.

Insert the short end of the TT-1003 tool *(see illustration A)* into the door and grasp the lower horizontal linkage rod. Twist the tool to lock onto the linkage and then lever the rod toward the rear of the car to unlock.

The passenger side door on this vehicle is not equipped with a lock. However, the driver's side door is equipped with a lock that can be picked. To unlock the car by picking the driver's side door lock, pick the lock in the counter-clockwise direction. TNL



2. Begin by wedging open the main window of the rear door near the back.



3. The lower of the two rods is the inside lock control linkage.

A. Insert the short end of the TT-1003 tool



Quick Reference Guide

Vehicle:
1997 – 1998 Cadillac Catera
Direction Of Turn:
Counter Clockwise (Driver's Side)
Tool: *TT-1003*
Lock System:
10-cut wafer tumbler system plus Transponder
Key Blank:
Jet — T10HF54-N-PHT, Ilco – T10HF54
Code Series:
S0001 – S2000

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Road Rally

A showcase of locksmith service vehicles.

If you think your vehicle has what it takes to be featured here, send photographs and descriptions to:
The National Locksmith, Road Rally, 1533 Burgundy Parkway, Streamwood, Illinois 60107-1861.



Owner: James E. Williams, Jr., Morrow, GA
Model: 1994 Ford Aerostar







Owner: Gilbert Bellmore, Livermore Falls, ME
Model: 1994 Chevy 20 Van

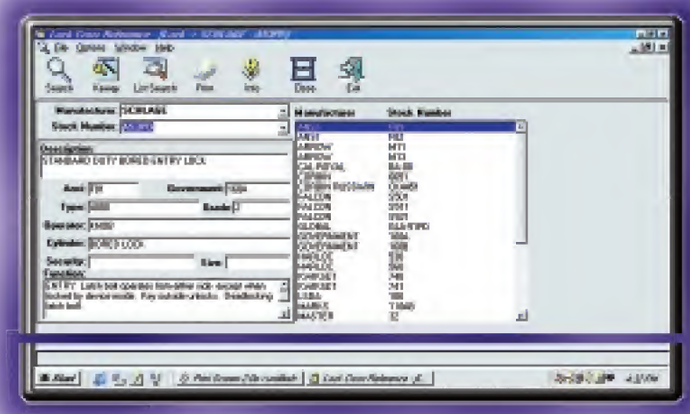
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ASP
medeco HIGH SECURITY LOCKS
SCHWAB CORP.
HPC
hes
Major MANUFACTURING, INC.
DCI
STRATTEC
SRi SECURITY RESOURCES INC.
NATIONAL AUTO LOCK SERVICE, INC.
The National Locksmith

Taking Industry Products for a

TEST DRIVE!

LOCK HARDWARE Cross Reference by Dalax, Inc.



With all the hardware choices there are today, it's almost impossible to keep track of it all. What's even more impossible is to know a cross reference for such products. Well now you don't have to know it all because there's a great software package that will do it for you. Lock Hardware Cross Reference by Dalax, is a computer software program that allows you to search a vast hardware data base for original manufacturers products and comparables. Frankly speaking, it's a wonderful piece of software.

PRODUCT: The Lock Hardware Cross Reference program lists Cam and Cabinet locks; Drawer locks; Electric Strikes; Keyblank's; Keyways; Cylinders; Panic hardware; Hinges; Closers; Exit Devices; Interchangeable Cores and much more. The program contains information on 88 manufacturers, 6000 keyways, 119,000 SKU's, and if printed would amount to over 200,000 pages of information. Name any manufacturers product in one of these categories and your sure to find it.

FEATURES: The program not only lists all these products, it gives a list of all the possible comparable products as well. For example: if you look up Schlage A53PD a list of all the manufacturers that make a comparable product will be listed along with their stock numbers.

The program includes Manufacturers names; Stock Numbers; a Description of the lock; ANSI numbers; Government numbers; Type of lock; Grade of lock; Operator features; Cylinder type; Security rating; Size of lock and Function information.

The brief and general descriptions for the various titles I just listed is just an example of the information given. The program actually goes into much more detail than I can present on one page.

A product search can also be performed via a manufacturers keyway number. For example I can choose an LA keyway and a list of all the manufacturers who make that keyway and the key blanks will be listed.

There is also an "Info" button that gives descriptive information on all the "Abbreviations" used in the program as well as a "Glossary of Terminology from A-Z."

All the information called up on a specific product may be printed.

All the information included in the Lock Hardware Cross Reference program is based on original manufacturers numbers.

SYSTEM REQUIREMENTS: System requirements to operate The Lock Hardware Cross Reference program is: 486/75 MHz or better PC, 8 MB RAM (16 recommended), 15 MB of free hard disk space and it runs under Windows 3.1, 95, 98 or NT, and the program will operate on a network.

PRICE: There are three versions of the Lock Hardware Cross Reference program available ranging from $129.00 - $295.00? For cylinders and keys only its $129.00. For IC Core info only its $157.00 and for the full blown version $295.00.

A demo version is also available for about $5.00 to cover postage and handling. Credit will be issued when the program is ordered.

CONCLUSION: This is an incredible program that any locksmith or builders' hardware business would benefit from . My hat goes off to Laurie Simon, the driving force and brain child of this software package. There's not a locksmith business anywhere that would not benefit from the information contained in this little jewel. It's excellent. I highly recommend it.

For more information on the Lock Hardware Cross Reference program contact: Dalax, Inc., 1314 Huntington Drive, Richardson, TX 75080-2809

Phone: (972) 234-8009, 800-960-5397; Fax: (972) 234-0339; E-mail: simon.says@airmail.net TNL

IN SUMMARY:

DESCRIPTION: Lock Hardware Cross Reference by Dalax, Inc.

COMMENTS: This is an incredible program that any locksmith business would benefit from.

TEST DRIVE RESULTS: Just having the original manufacturers numbers at your quick disposal is worth its weight in gold. It's excellent. I highly recommend it.

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